FIG. 58

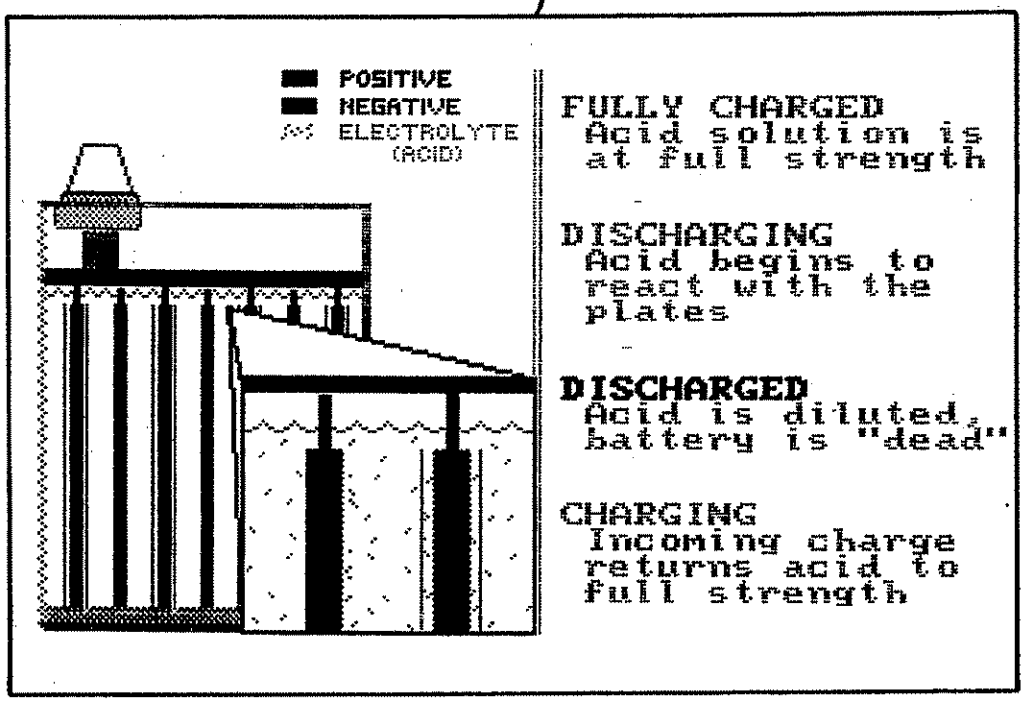

770
POSITIVE
NEGATIVE
ELECTROLYTE (ACID)
FULLY CHARGED
Acid solution is at full strength
DISCHARGING
Acid begins to react with the plates
DISCHARGED
Acid is diluted, battery is "dead"
CHARGING
Incoming charge returns acid to full strength

FIG. 59

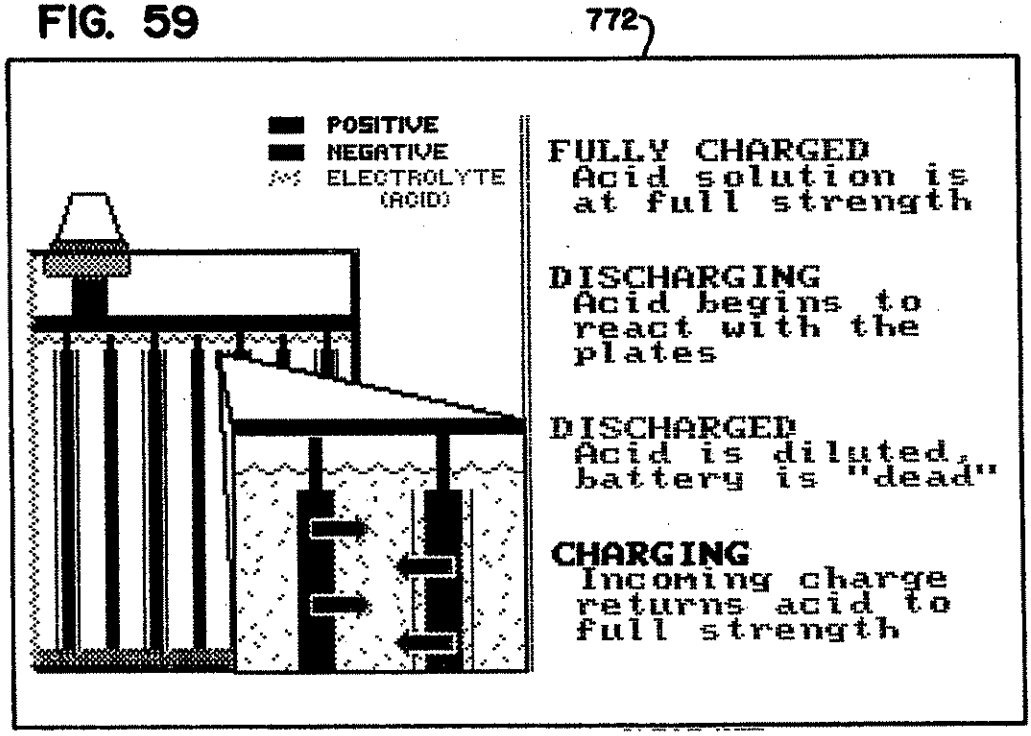

772
POSITIVE
NEGATIVE
ELECTROLYTE (ACID)
FULLY CHARGED
Acid solution is at full strength
DISCHARGING
Acid begins to react with the plates
DISCHARGED
Acid is diluted, battery is "dead"
CHARGING
Incoming charge returns acid to full strength

FIG. 60

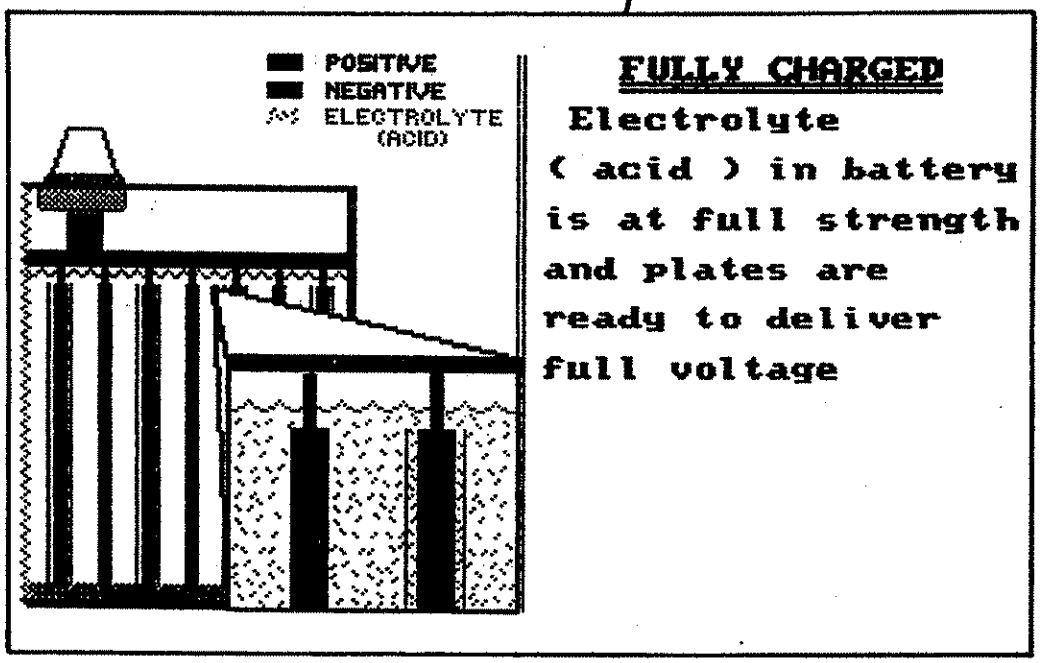

780
POSITIVE
NEGATIVE
ELECTROLYTE
(ACID)
FULLY CHARGED
Electrolyte
(acid) in battery
is at full strength
and plates are
ready to deliver
full voltage

FIG. 61

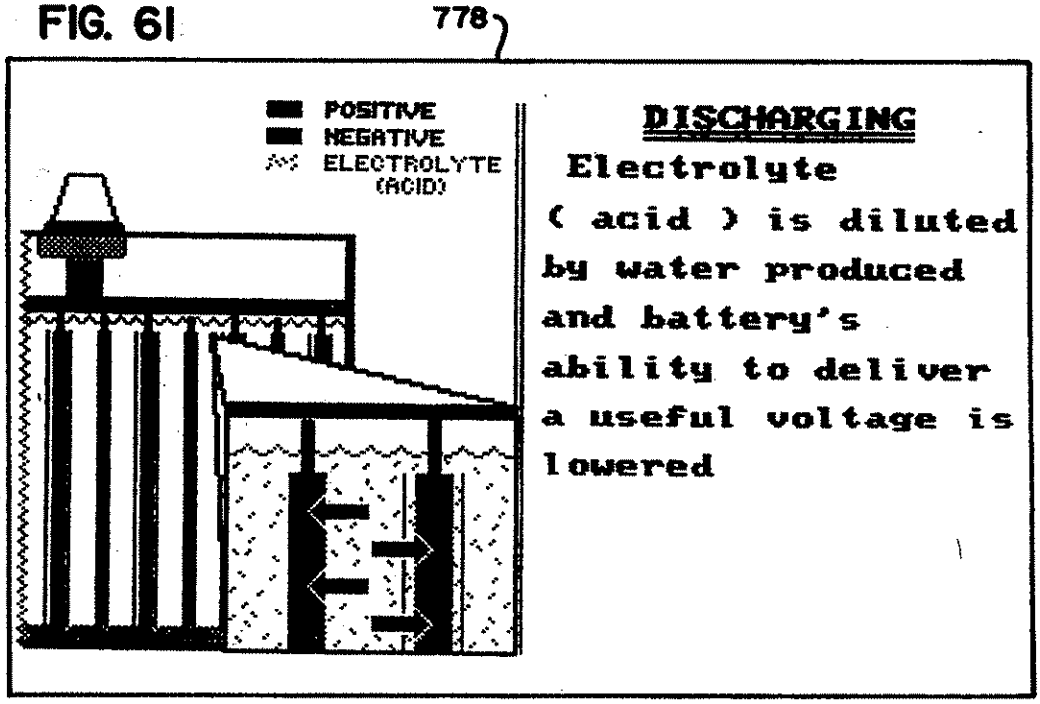

778
POSITIVE
NEGATIVE
ELECTROLYTE
(ACID)
DISCHARGING
Electrolyte
(acid) is diluted
by water produced
and battery's
ability to deliver
a useful voltage is
lowered

FIG. 62

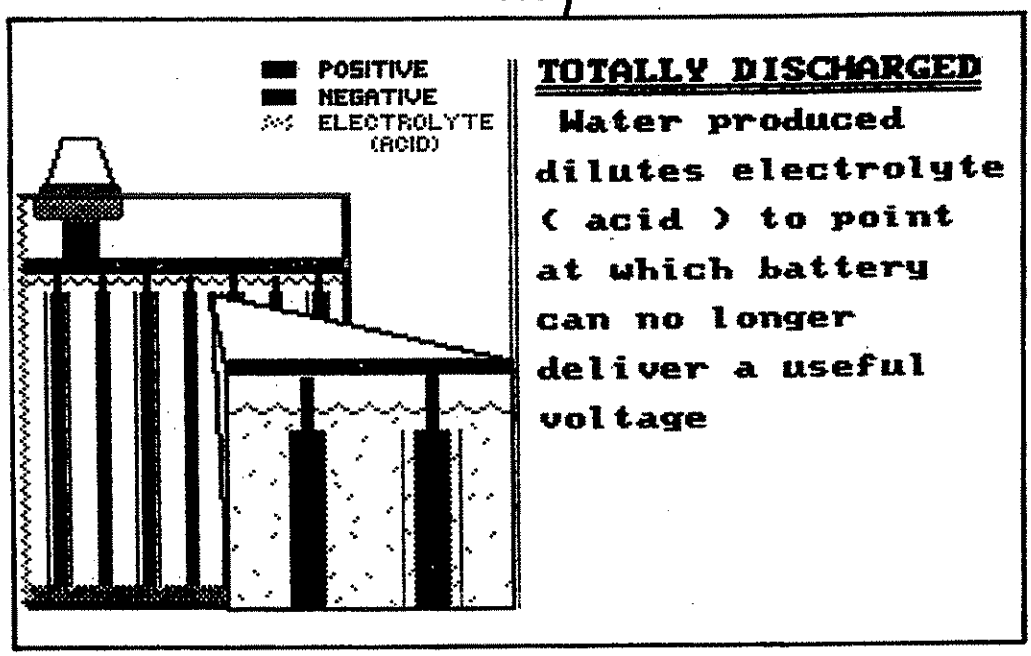

776
POSITIVE
NEGATIVE
ELECTROLYTE (ACID)
TOTALLY DISCHARGED
Water produced dilutes electrolyte (acid) to point at which battery can no longer deliver a useful voltage

FIG. 63

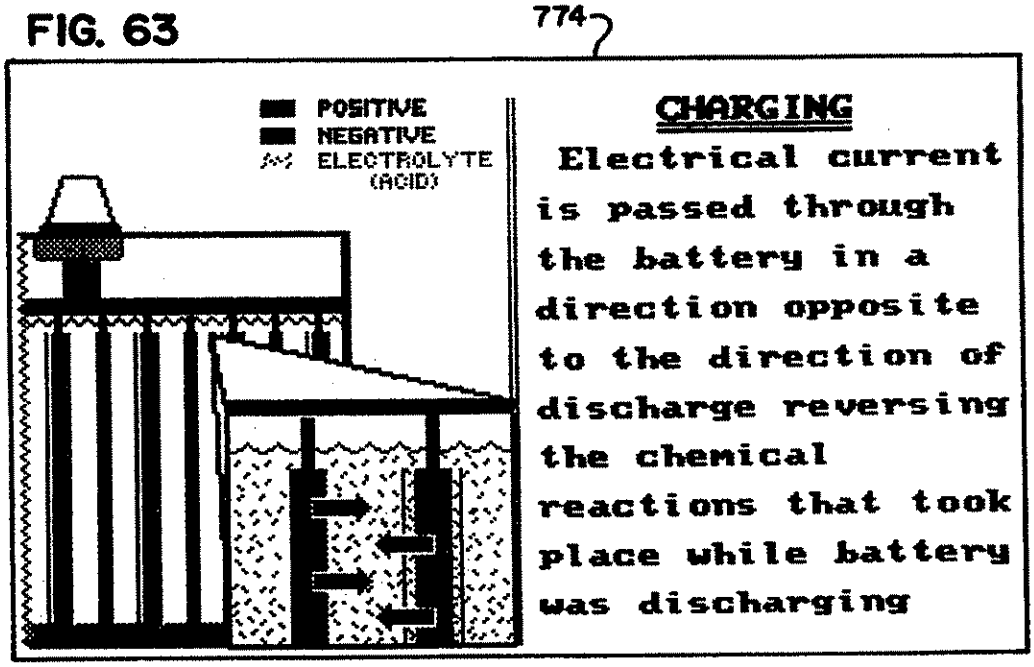

774
POSITIVE
NEGATIVE
ELECTROLYTE (ACID)
CHARGING
Electrical current is passed through the battery in a direction opposite to the direction of discharge reversing the chemical reactions that took place while battery was discharging

FIG. 64

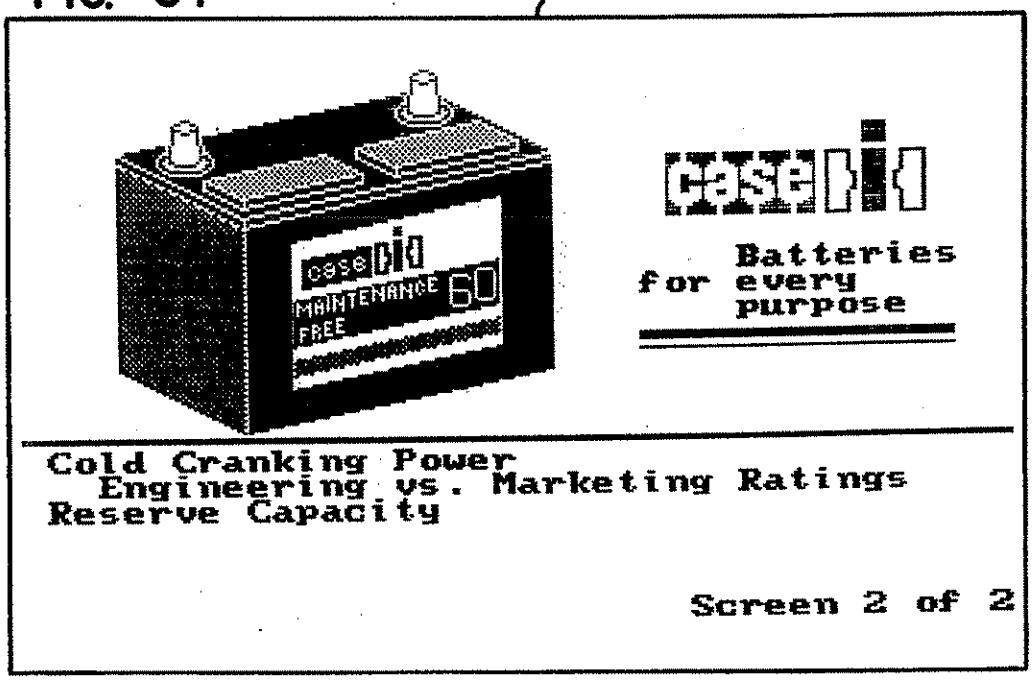
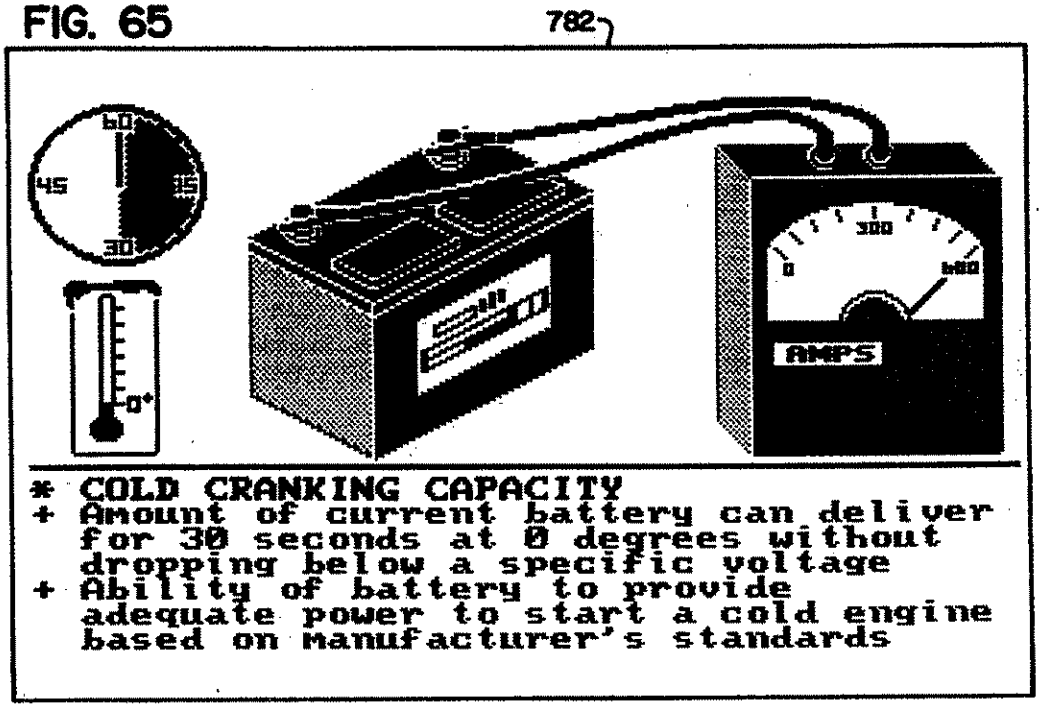

759
MAINTENANCE FREE
Batteries for every purpose
Cold Cranking Power
Engineering vs. Marketing Ratings
Reserve Capacity
Screen 2 of 2

FIG. 65


782
AMPS
* COLD CRANKING CAPACITY
+ Amount of current battery can deliver for 30 seconds at 0 degrees without dropping below a specific voltage
+ Ability of battery to provide adequate power to start a cold engine based on manufacturer's standards

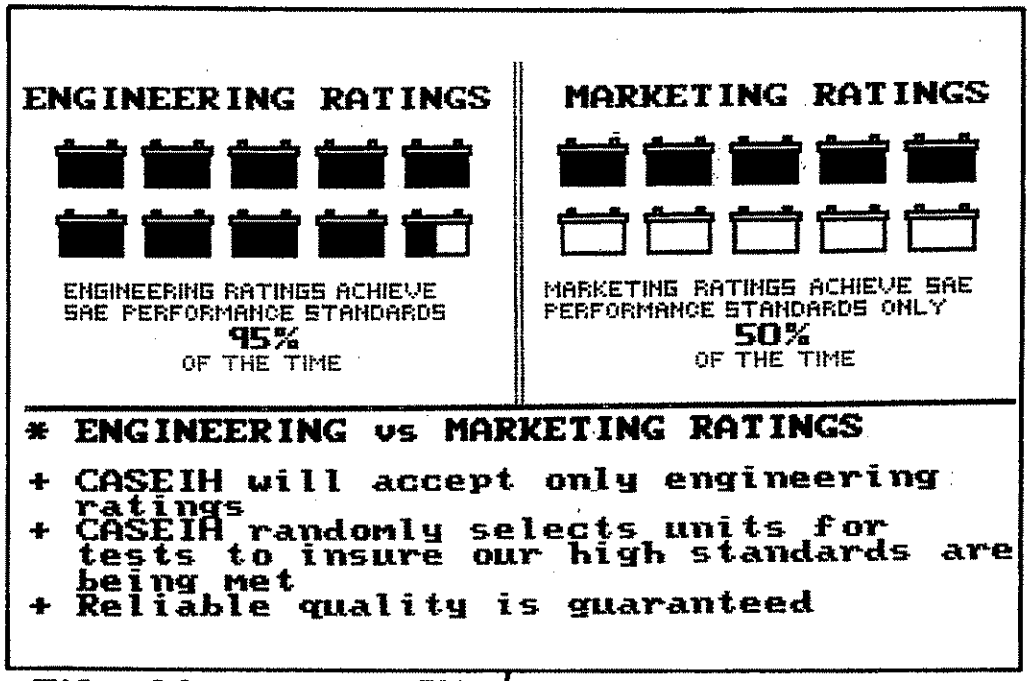
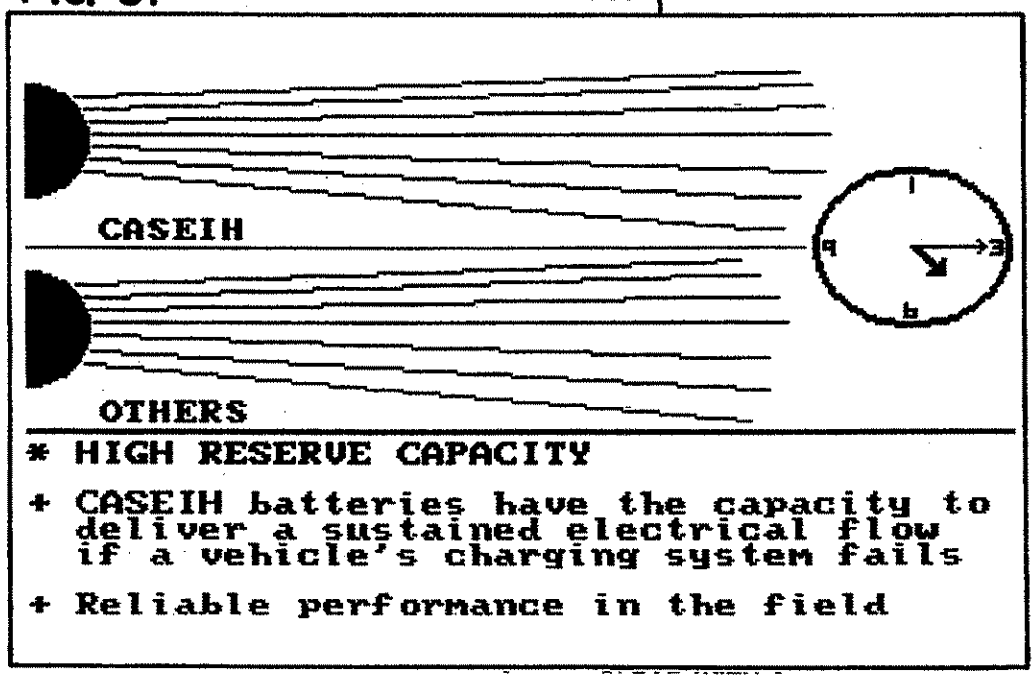

ENGINEERING RATINGS
ENGINEERING RATINGS ACHIEVE SAE PERFORMANCE STANDARDS 95% OF THE TIME
MARKETING RATINGS
MARKETING RATINGS ACHIEVE SAE PERFORMANCE STANDARDS ONLY 50% OF THE TIME
* ENGINEERING vs MARKETING RATINGS
+ CASEIH will accept only engineering ratings
+ CASEIH randomly selects units for tests to insure our high standards are being met
+ Reliable quality is guaranteed
784

FIG. 66

FIG. 67


786
CASEIH
OTHERS
* HIGH RESERVE CAPACITY
+ CASEIH batteries have the capacity to deliver a sustained electrical flow if a vehicle's charging system fails
+ Reliable performance in the field

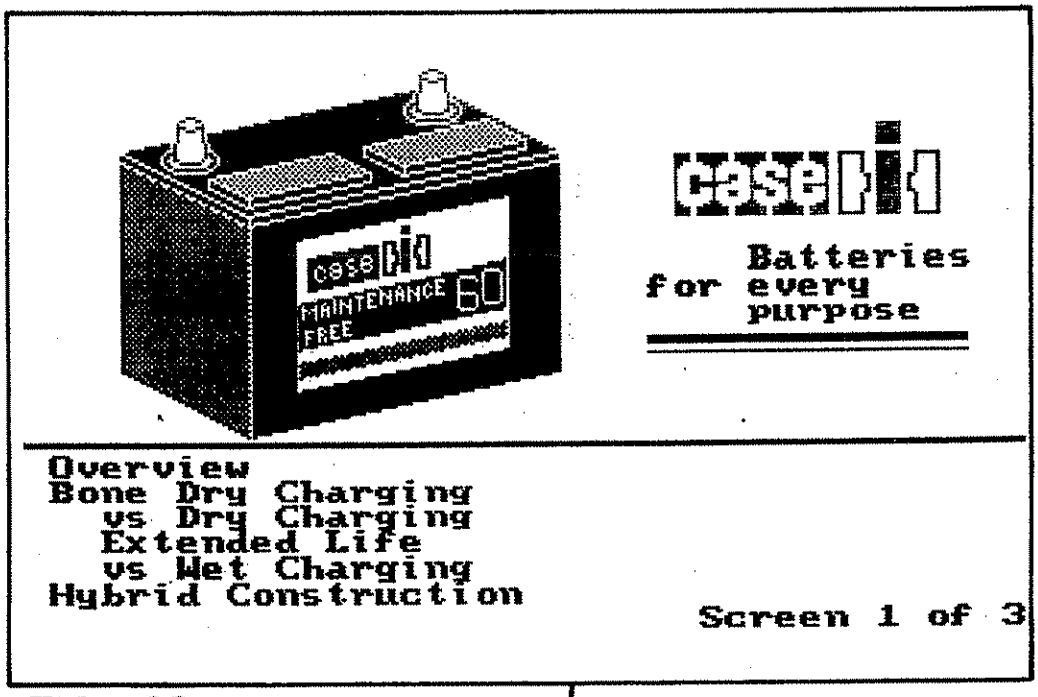
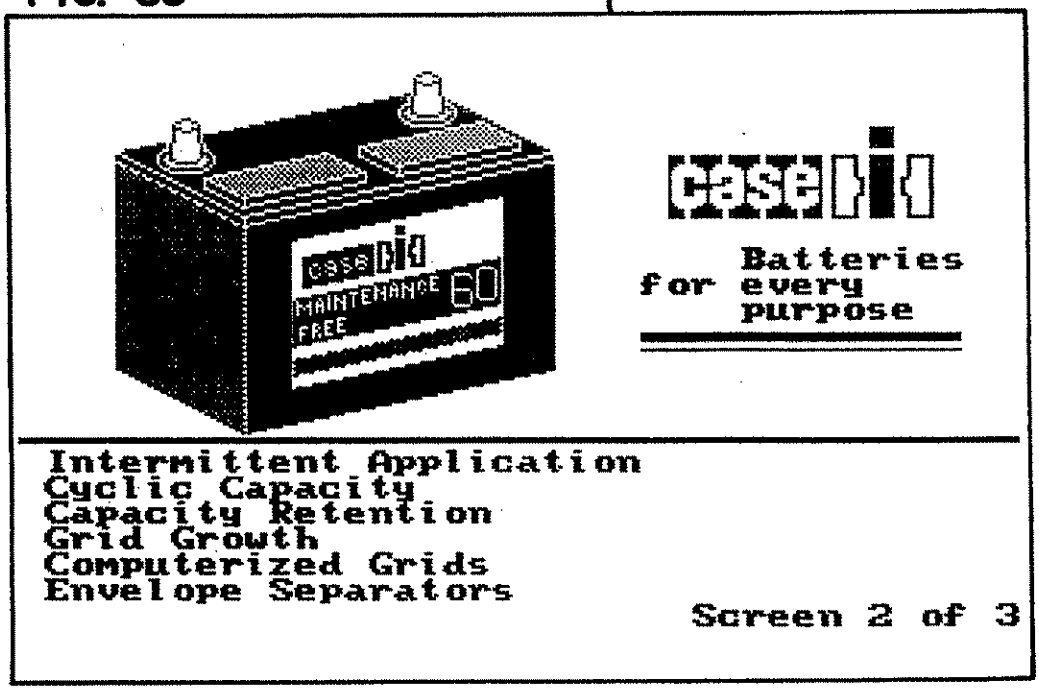

MAINTENANCE FREE
60
Batteries for every purpose
Overview
Bone Dry Charging
vs Dry Charging
Extended Life
vs Wet Charging
Hybrid Construction
Screen 1 of 3
788

FIG. 68

FIG. 69


790
MAINTENANCE FREE
60
Batteries for every purpose
Intermittent Application
Cyclic Capacity
Capacity Retention
Grid Growth
Computerized Grids
Envelope Separators
Screen 2 of 3

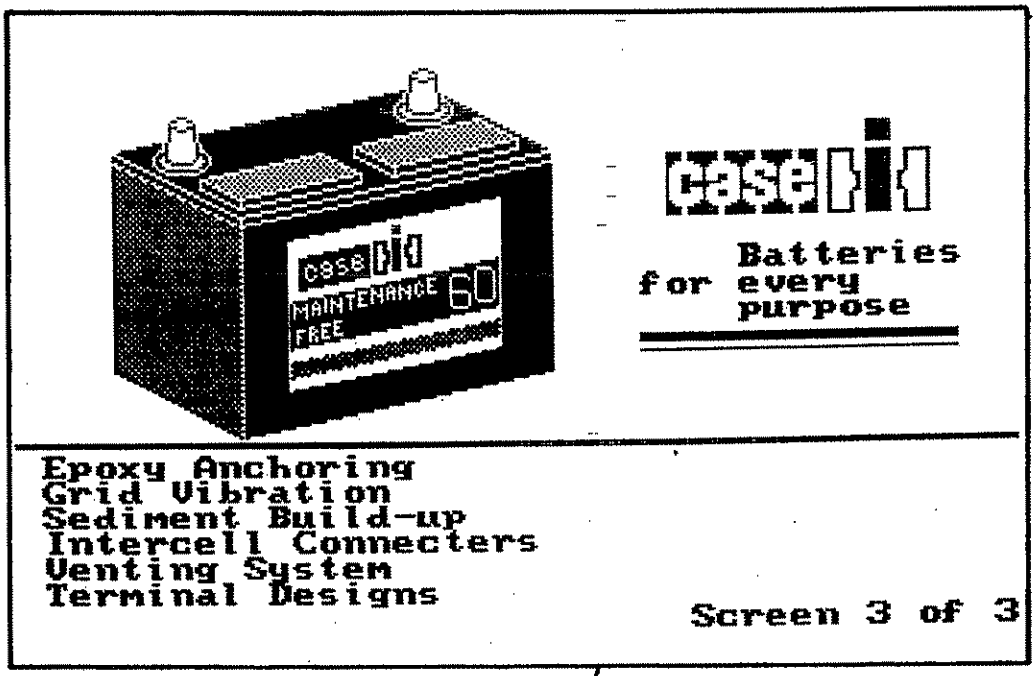
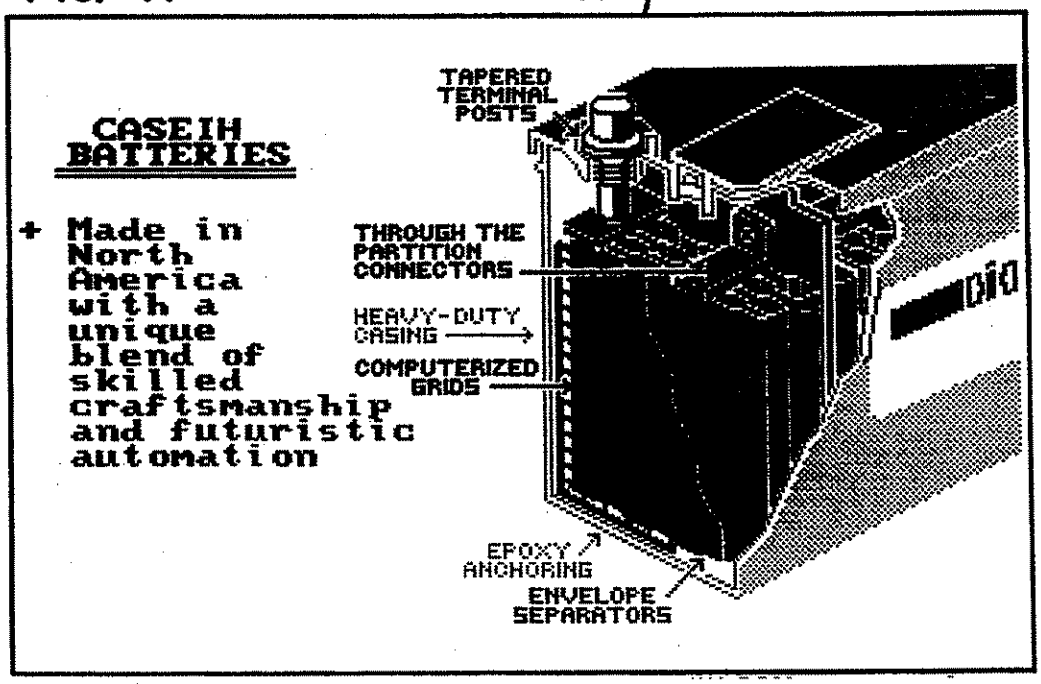

CASE IH
MAINTENANCE FREE
60
CASE IH
Batteries
for every purpose
Epoxy Anchoring
Grid Vibration
Sediment Build-up
Intercell Connecters
Venting System
Terminal Designs
Screen 3 of 3
816

FIG. 70

FIG. 71


792
CASEIH BATTERIES
+ Made in North America with a unique blend of skilled craftsmanship and futuristic automation
TAPERED TERMINAL POSTS
THROUGH THE PARTITION CONNECTORS
HEAVY-DUTY CASING
COMPUTERIZED GRIDS
EPOXY ANCHORING
ENVELOPE SEPARATORS
CASE IH

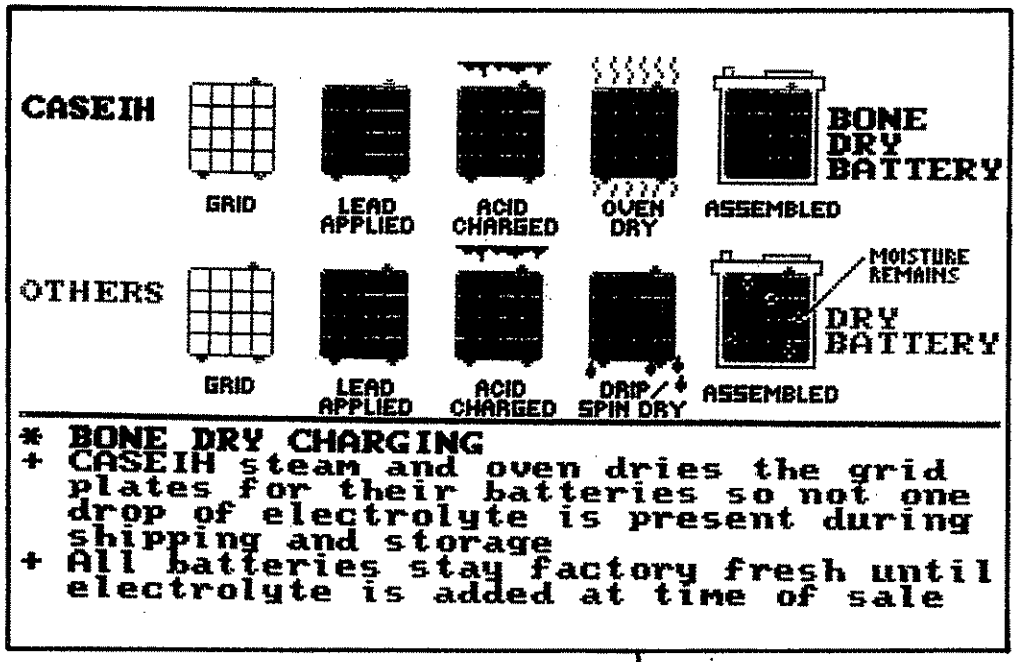
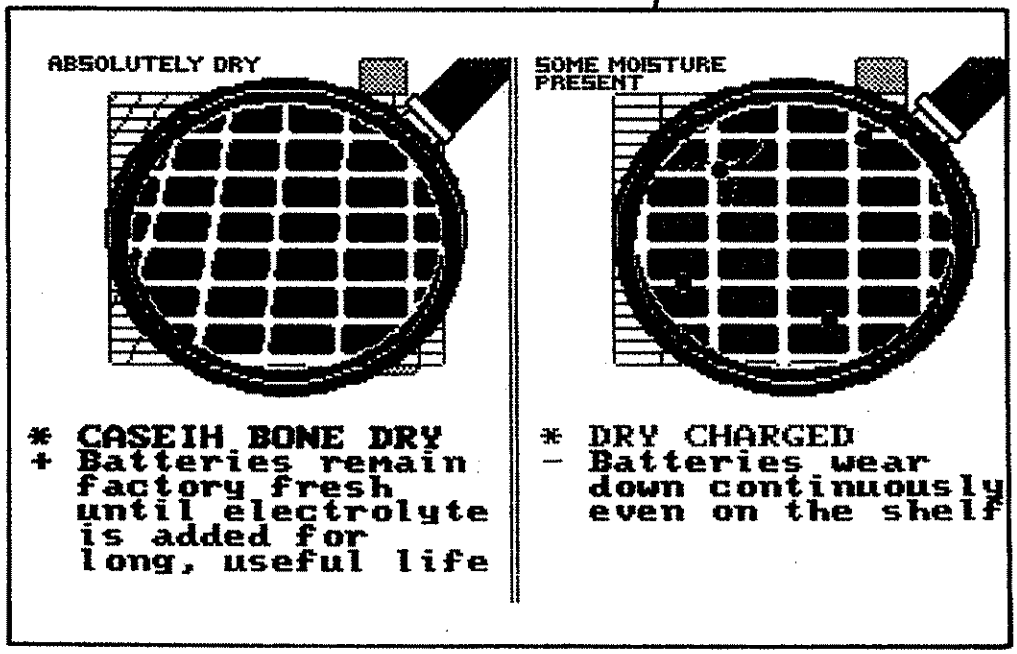


FIG. 72

794

FIG. 73

796



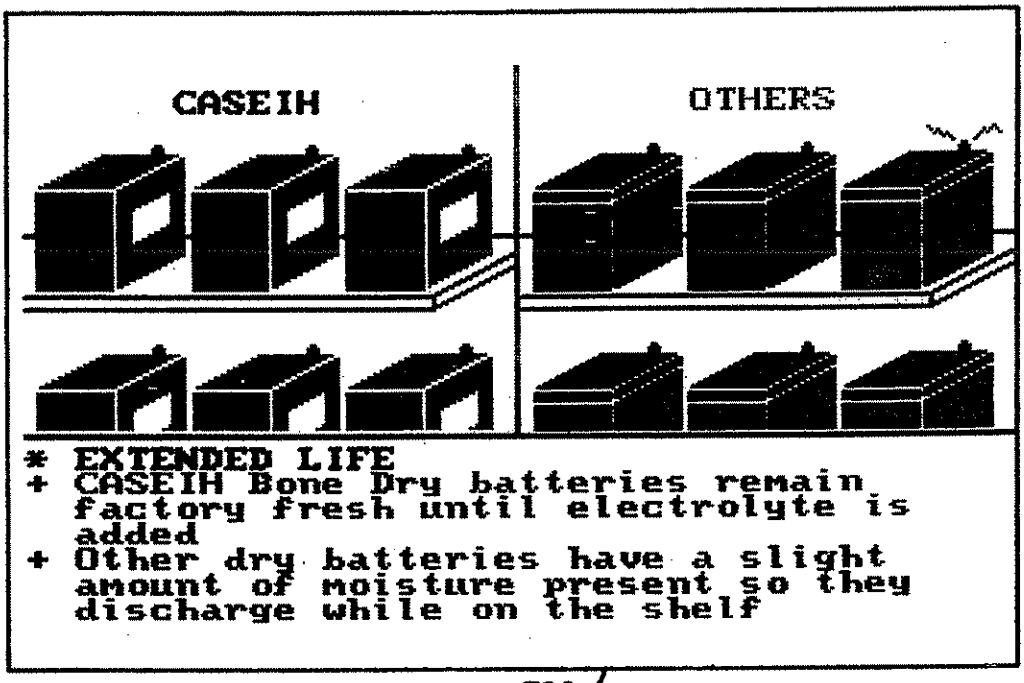

CASEIH
OTHERS
* EXTENDED LIFE
+ CASEIH Bone Dry batteries remain factory fresh until electrolyte is added
+ Other dry batteries have a slight amount of moisture present so they discharge while on the shelf
798

FIG. 74

FIG. 75

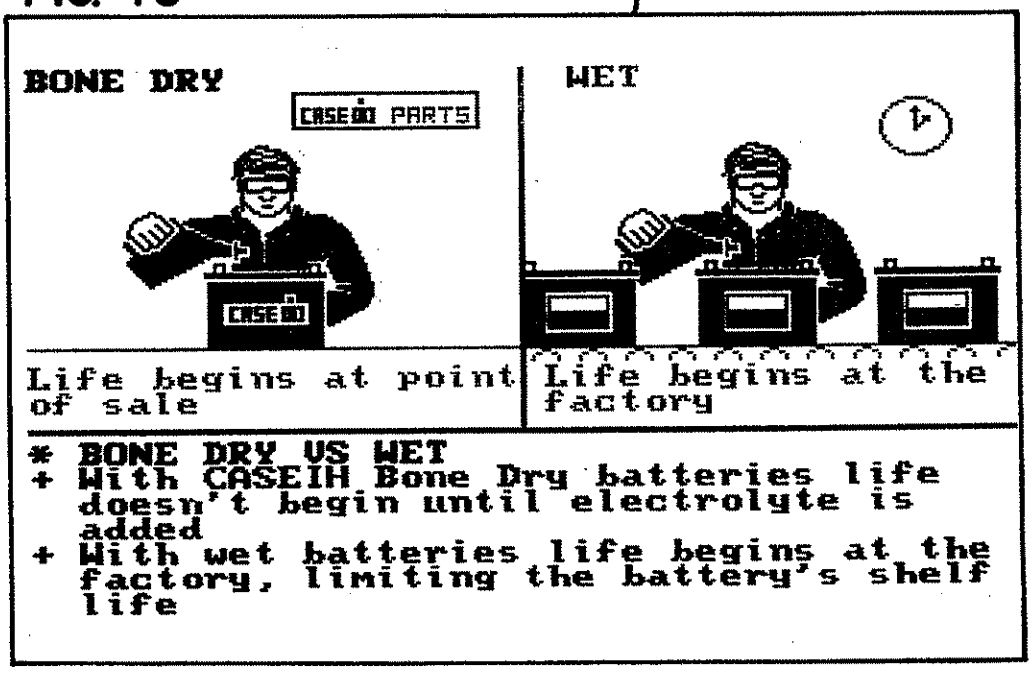

800
BONE DRY
CASE PARTS
WET
Life begins at point of sale
Life begins at the factory
* BONE DRY VS WET
+ With CASEIH Bone Dry batteries life doesn't begin until electrolyte is added
+ With wet batteries life begins at the factory, limiting the battery's shelf life

FIG. 76

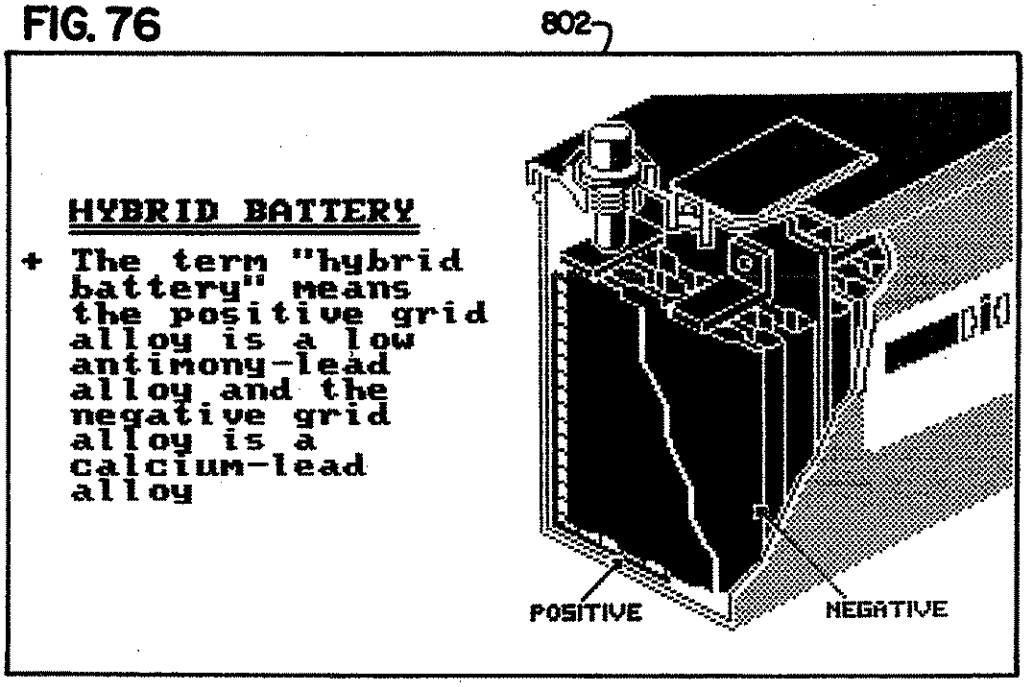
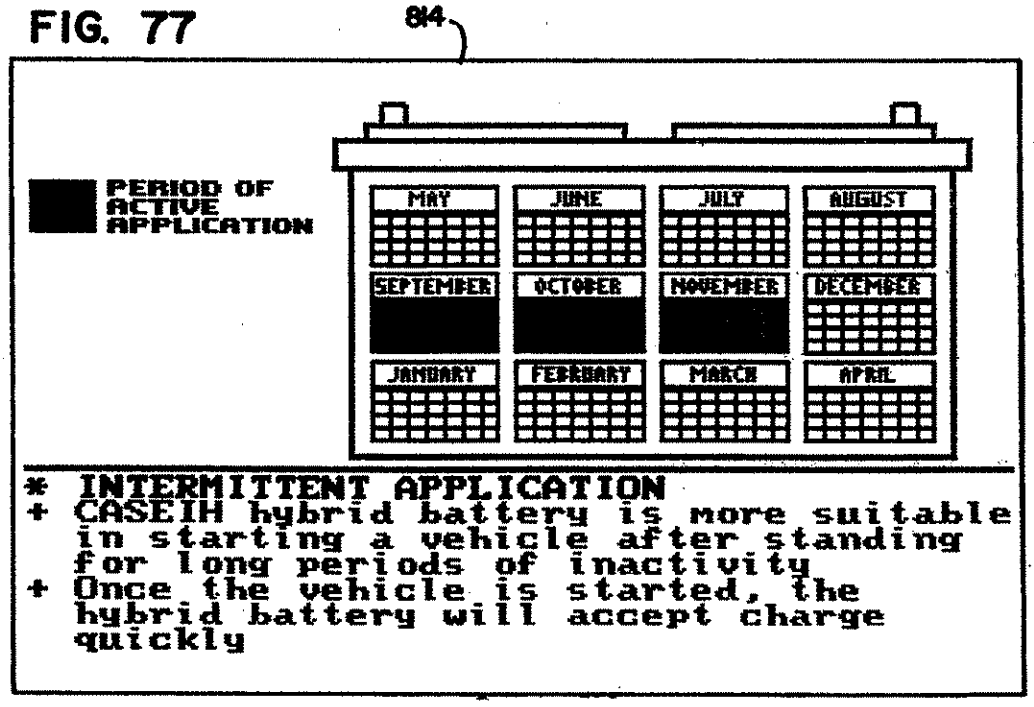

802
HYBRID BATTERY
+ The term "hybrid battery" means the positive grid alloy is a low antimony-lead alloy and the negative grid alloy is a calcium-lead alloy
POSITIVE
NEGATIVE

FIG. 77


814
PERIOD OF ACTIVE APPLICATION
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER
NOVEMBER
DECEMBER
JANUARY
FEBRUARY
MARCH
APRIL
* INTERMITTENT APPLICATION
+ CASEIH hybrid battery is more suitable in starting a vehicle after standing for long periods of inactivity
+ Once the vehicle is started, the hybrid battery will accept charge quickly

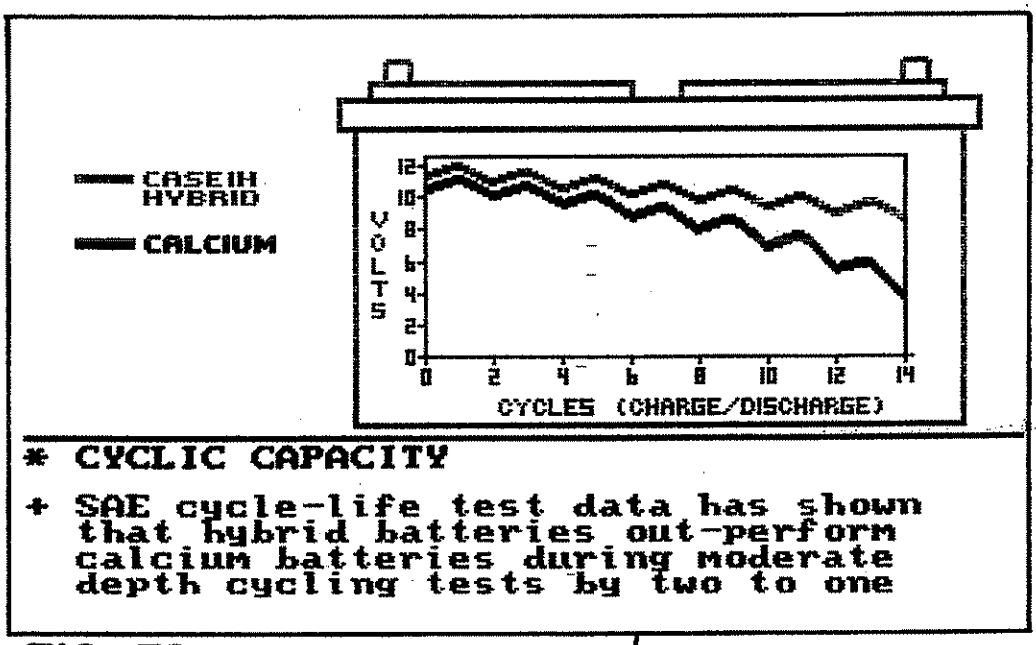

CASEIH HYBRID
CALCIUM
VOLTS
0
2
4
6
8
10
12
14
CYCLES (CHARGE/DISCHARGE)
* CYCLIC CAPACITY
+ SAE cycle-life test data has shown that hybrid batteries out-perform calcium batteries during moderate depth cycling tests by two to one
812

FIG. 78

FIG. 79

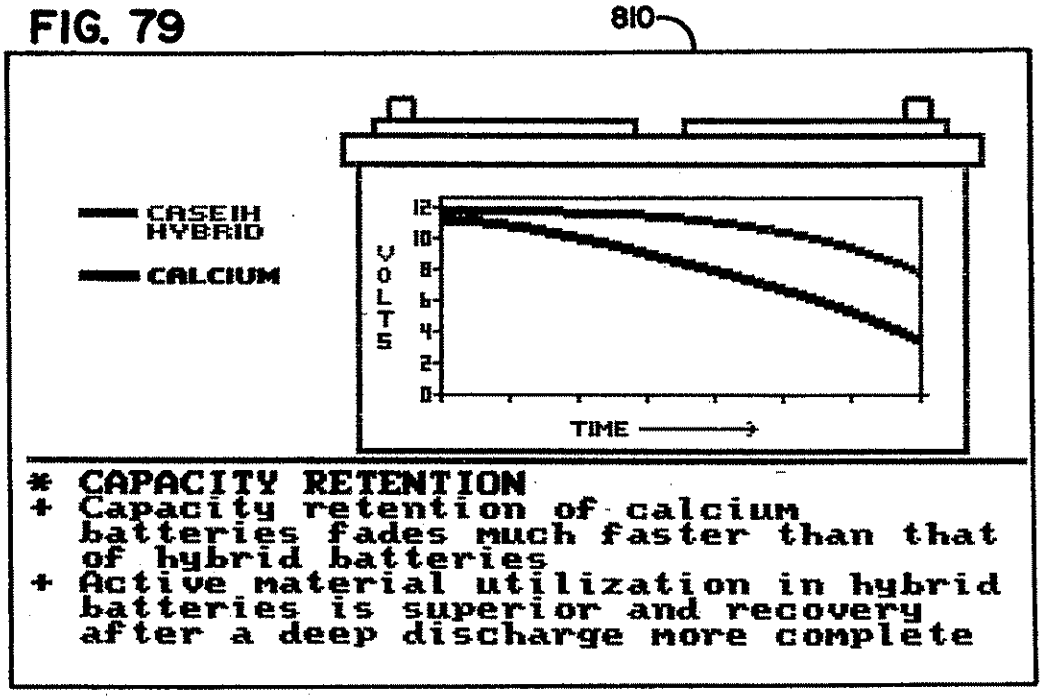

810
CASEIH HYBRID
CALCIUM
VOLTS
0
2
4
6
8
10
12
TIME
* CAPACITY RETENTION
+ Capacity retention of calcium batteries fades much faster than that of hybrid batteries
+ Active material utilization in hybrid batteries is superior and recovery after a deep discharge more complete

FIG. 80

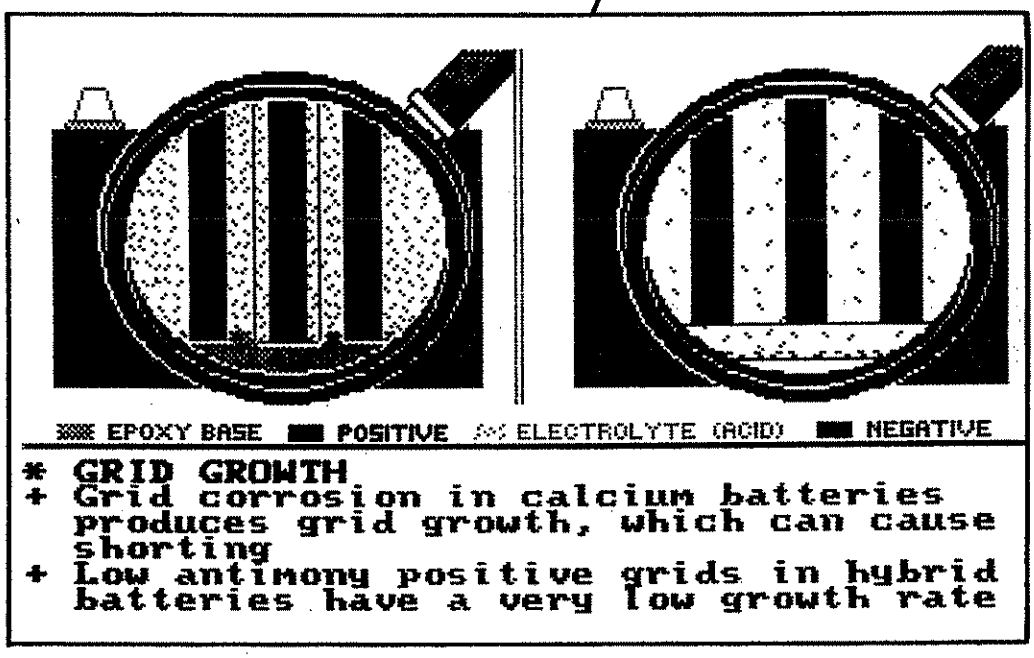

808
EPOXY BASE
POSITIVE
ELECTROLYTE (ACID)
NEGATIVE
* GRID GROWTH
+ Grid corrosion in calcium batteries produces grid growth, which can cause shorting
+ Low antimony positive grids in hybrid batteries have a very low growth rate

FIG. 81

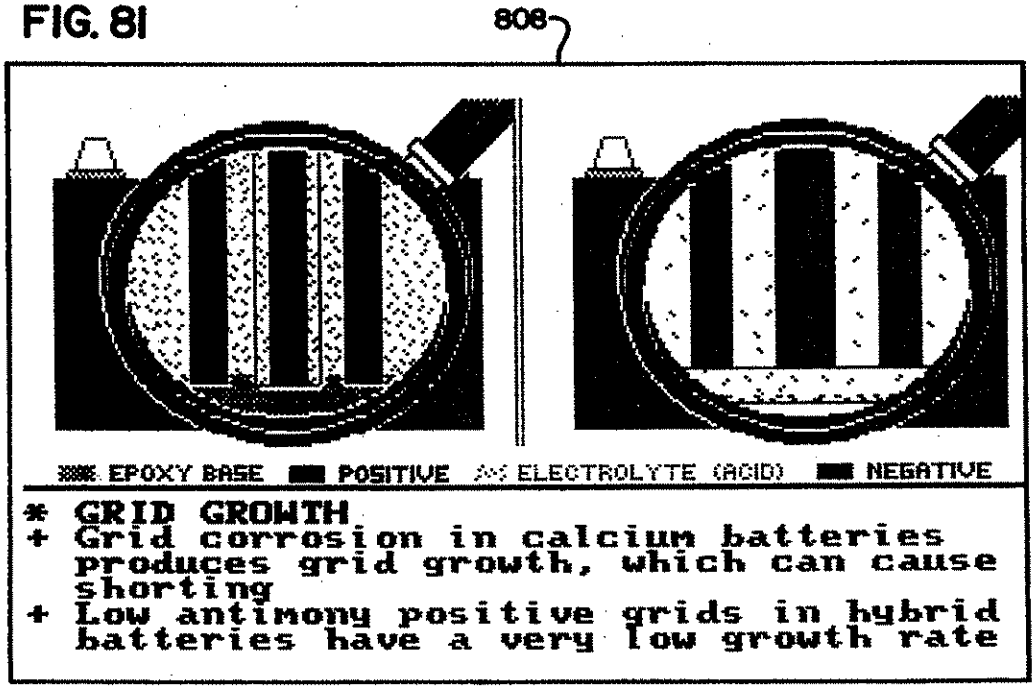

808
EPOXY BASE
POSITIVE
ELECTROLYTE (ACID)
NEGATIVE
* GRID GROWTH
+ Grid corrosion in calcium batteries produces grid growth, which can cause shorting
+ Low antimony positive grids in hybrid batteries have a very low growth rate

FIG. 82

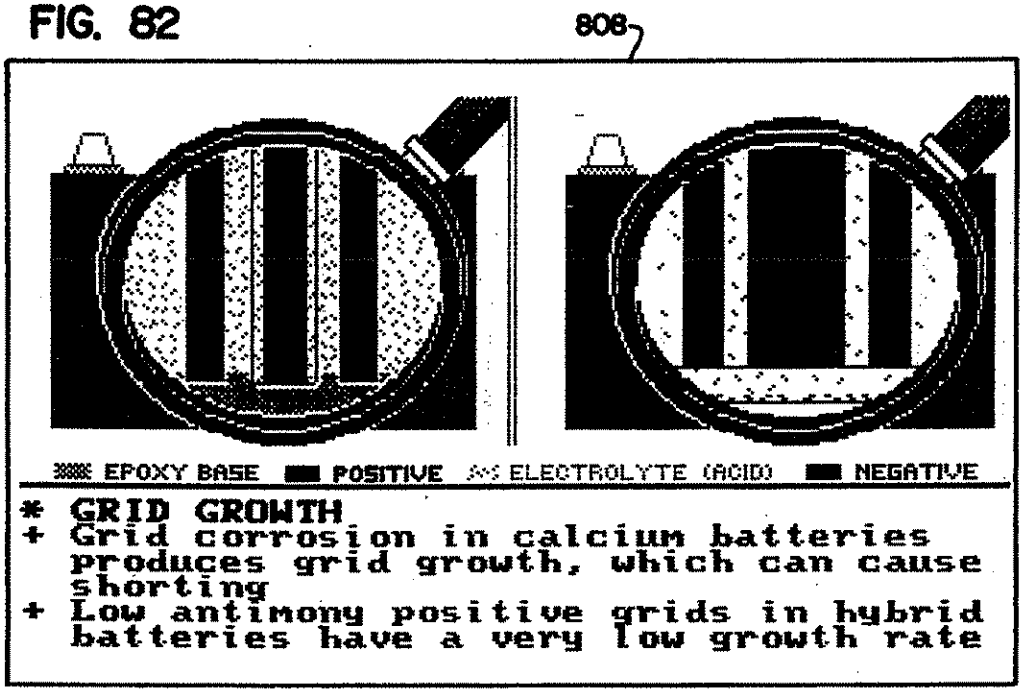

808
EPOXY BASE
POSITIVE
ELECTROLYTE (ACID)
NEGATIVE
* GRID GROWTH
+ Grid corrosion in calcium batteries produces grid growth, which can cause shorting
+ Low antimony positive grids in hybrid batteries have a very low growth rate

FIG. 83

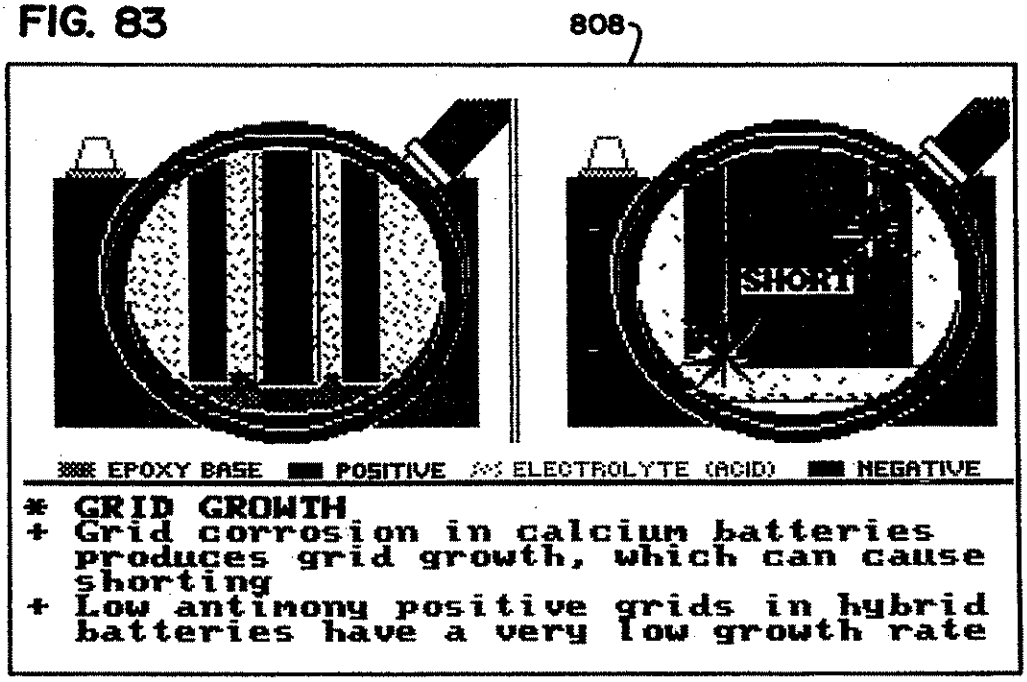

808
SHORT
EPOXY BASE
POSITIVE
ELECTROLYTE (ACID)
NEGATIVE
* GRID GROWTH
+ Grid corrosion in calcium batteries produces grid growth, which can cause shorting
+ Low antimony positive grids in hybrid batteries have a very low growth rate

FIG. 84

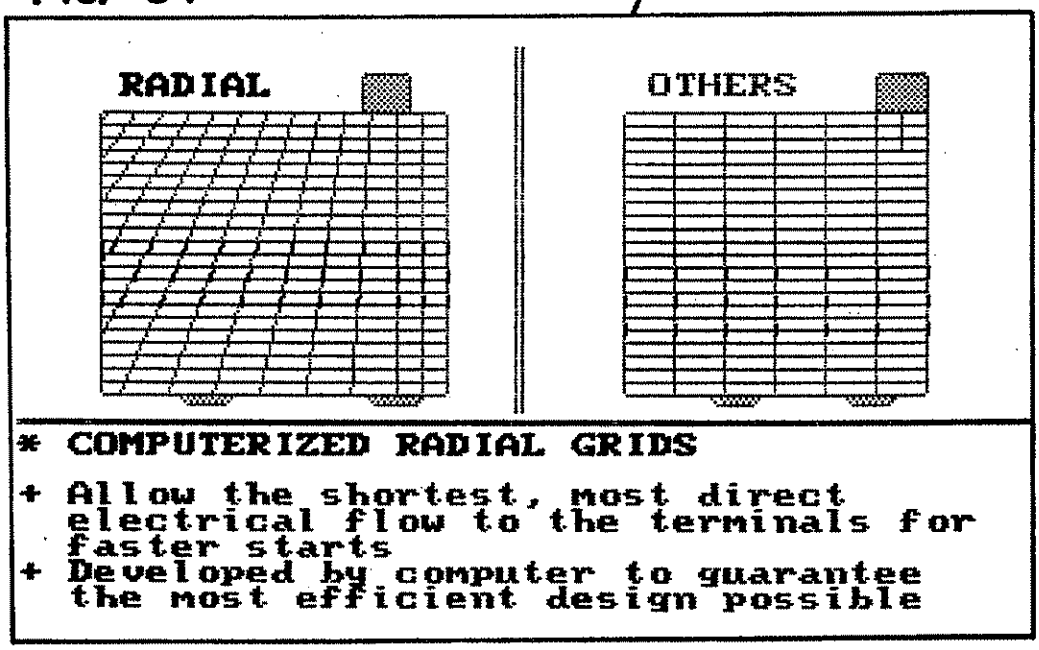
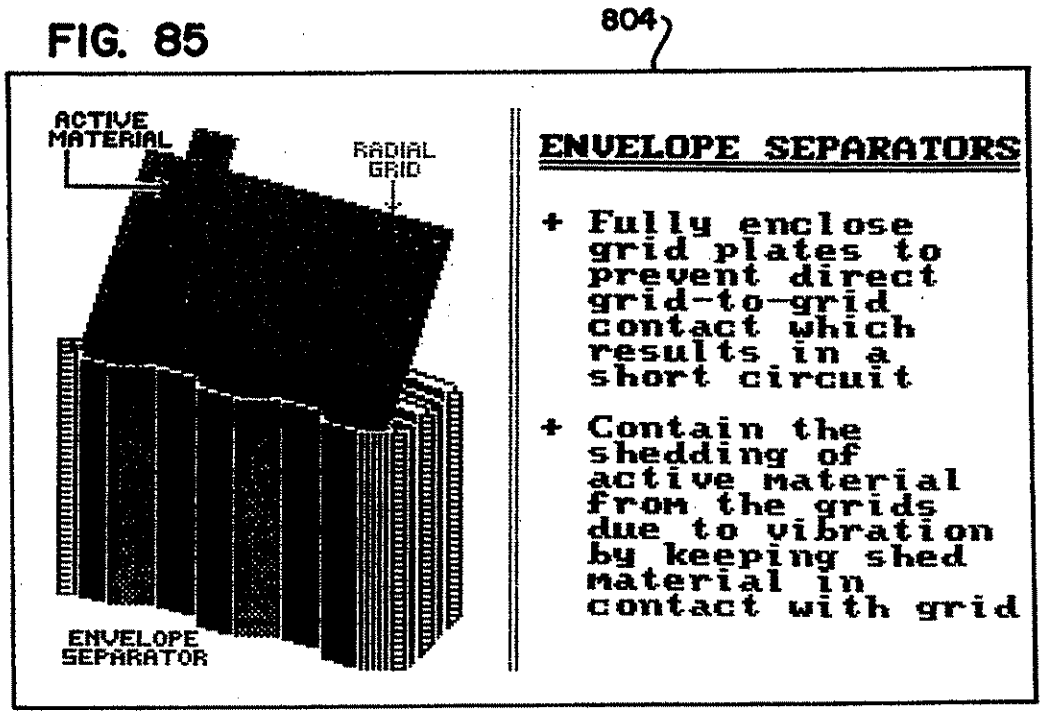

806
RADIAL
OTHERS
* COMPUTERIZED RADIAL GRIDS
+ Allow the shortest, most direct electrical flow to the terminals for faster starts
+ Developed by computer to guarantee the most efficient design possible

FIG. 85


804
ACTIVE MATERIAL
RADIAL GRID
ENVELOPE SEPARATOR
ENVELOPE SEPARATORS
+ Fully enclose grid plates to prevent direct grid-to-grid contact which results in a short circuit
+ Contain the shedding of active material from the grids due to vibration by keeping shed material in contact with grid

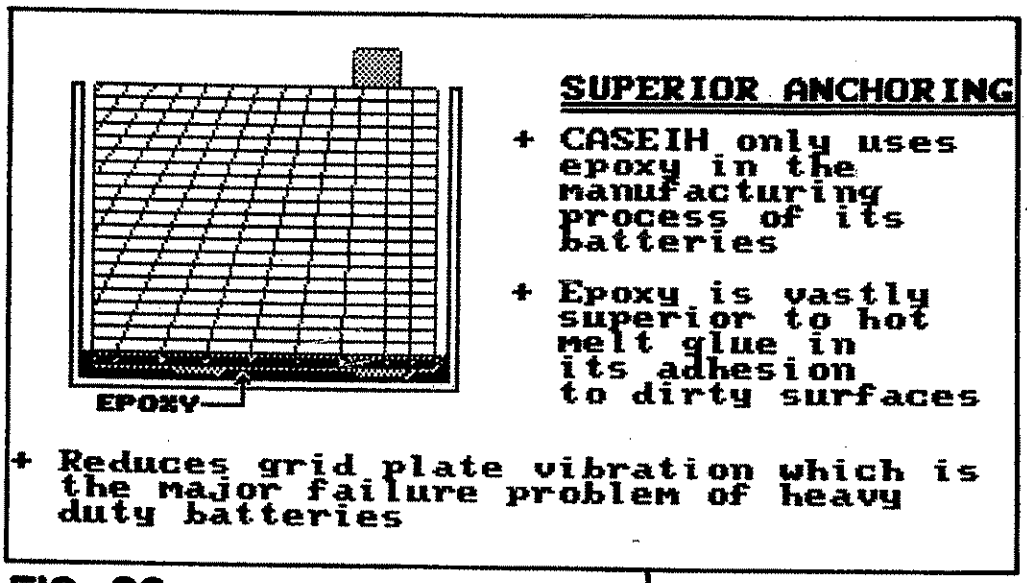

SUPERIOR ANCHORING
+ CASEIH only uses epoxy in the manufacturing process of its batteries
+ Epoxy is vastly superior to hot melt glue in its adhesion to dirty surfaces
EPOXY
+ Reduces grid plate vibration which is the major failure problem of heavy duty batteries
818

FIG. 86

FIG. 87

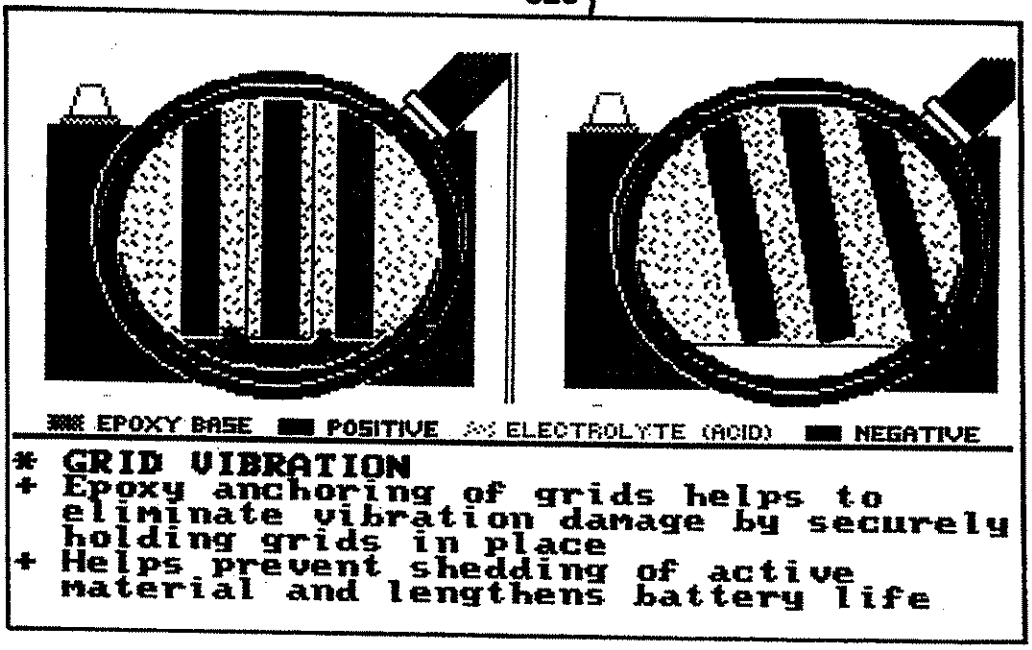
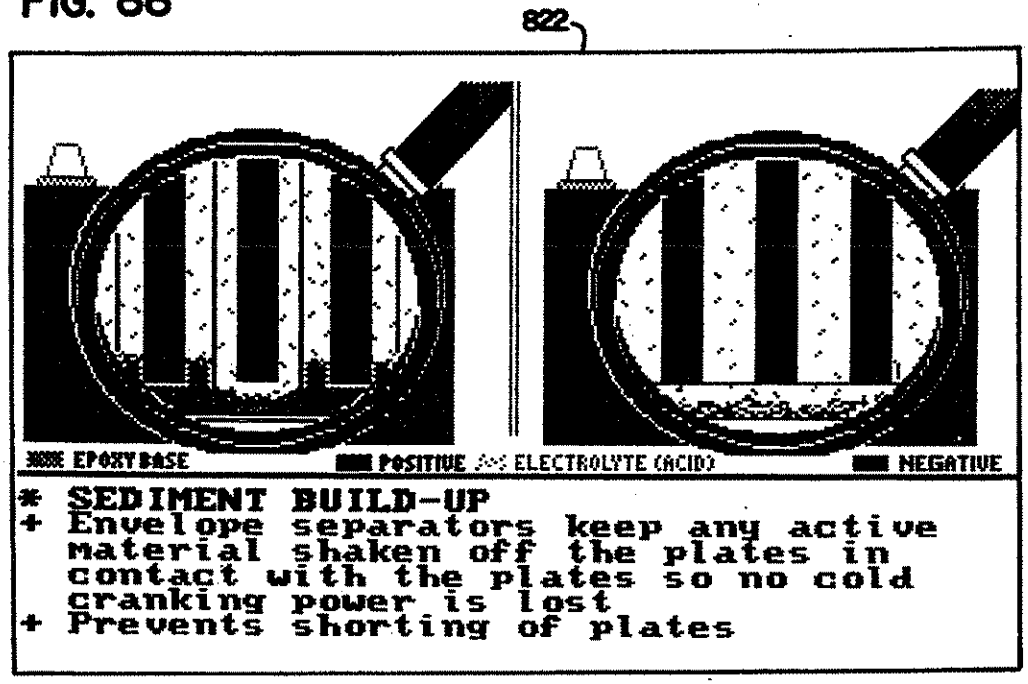
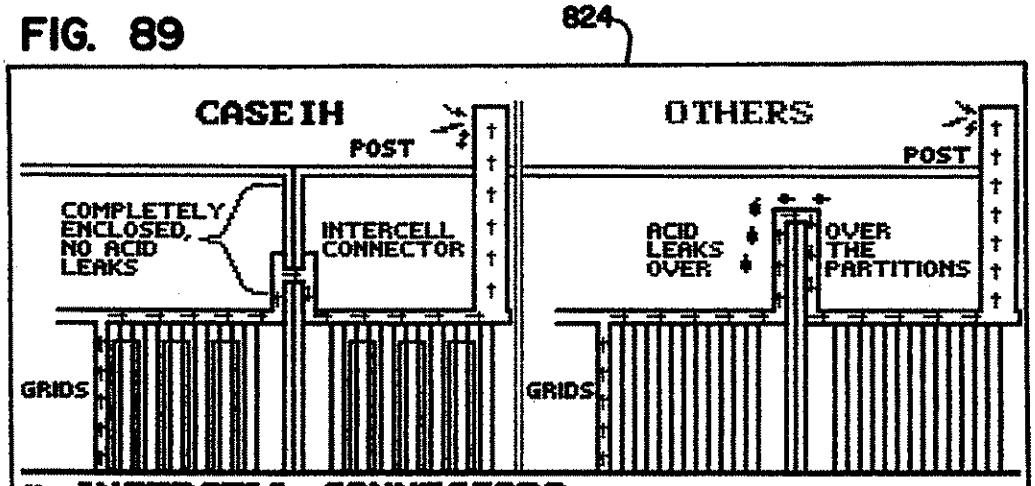

820
EPOXY BASE
POSITIVE
ELECTROLYTE (ACID)
NEGATIVE
* GRID VIBRATION
+ Epoxy anchoring of grids helps to eliminate vibration damage by securely holding grids in place
+ Helps prevent shedding of active material and lengthens battery life

FIG. 88



* SEDIMENT BUILD-UP
+ Envelope separators keep any active material shaken off the plates in contact with the plates so no cold cranking power is lost
+ Prevents shorting of plates

FIG. 89



* INTERCELL CONNECTORS
+ Provide a shorter, lower resistance path through the battery for higher discharge voltage
+ Avoid dead cells caused by acid leakage for greater reliability

FIG. 90

826

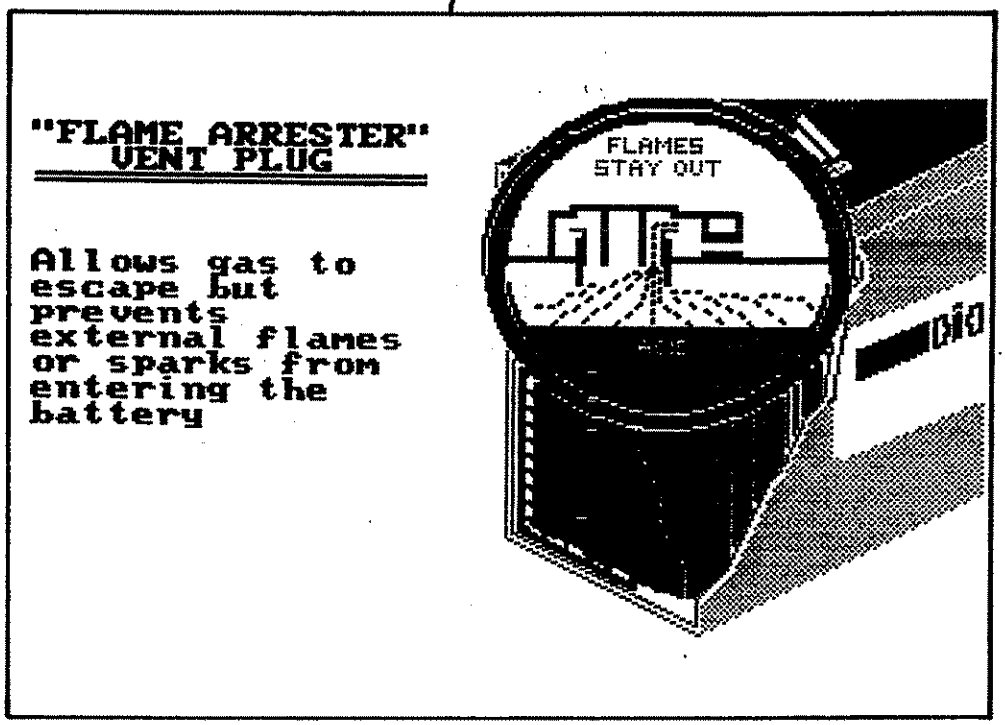
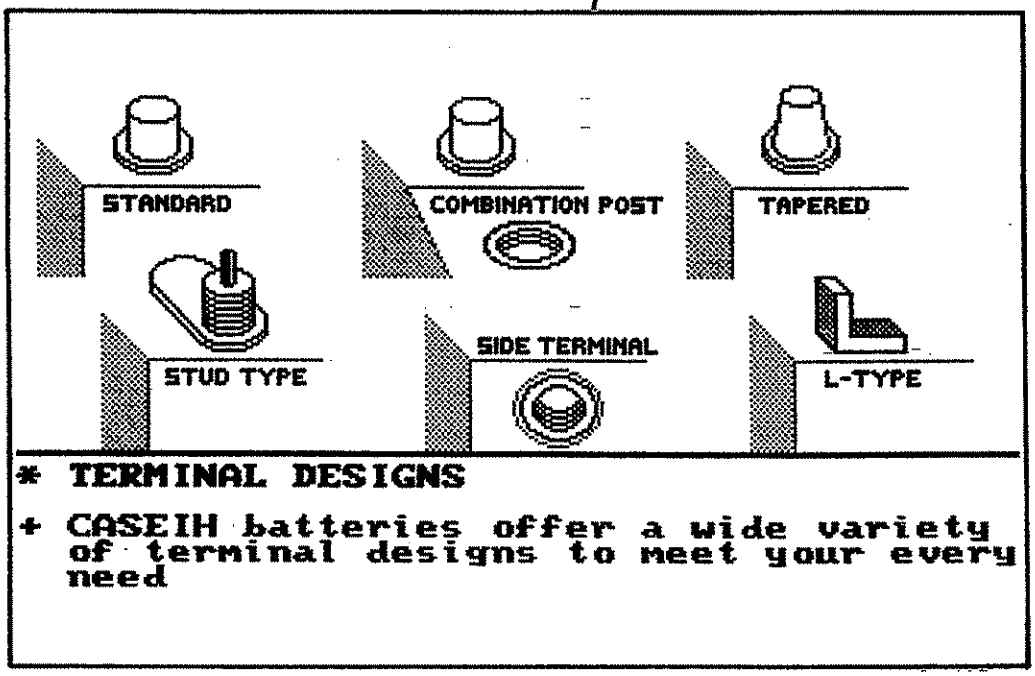


FIG. 91

828



COMPUTER-ASSISTED PARTS SALES METHOD

This is a continuation of application Ser. No. 07/959,525, filed Oct. 13, 1992, U.S. Pat. No. 5,283,865 which is a continuation of application Ser. No. 07/435,809, filed Nov. 13, 1989, now abandoned.

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BACKGROUND OF THE INVENTION

Traditionally, a parts salesperson must carry with him or her all of the sales tools related to the particular kinds of parts that they wish to sell. These tools include parts catalogs, sample parts, and parts order forms. To carry the combination of all of these sales tools can be very cumbersome for a salesperson. For a salesperson to bring all of these sales tools into a customer visit could be quite difficult. In particular, if a parts salesperson must bring in parts catalogs for several types of parts as well as several different manufacturers of parts, and in addition the corresponding samples of each type of part by each of the manufacturers, the salesperson may find this overwhelming and choose to limit the number of parts that they sell or the particular manufacturers that they sell for.

Further, looking up a part number in a catalog can take significant amounts of time. In addition, trying to match a particular part with a particular need can be very difficult. For instance, trying to find a particular filter which will fit on a particular product may be impossible to accomplish in a limited amount of time. It can be even more difficult to determine all parts that a user with many types and brands of equipment may require. Further, the generation of a corresponding proposal or order, particularly a personalized one, has been difficult. An additional long felt need has been the need to educate sales people with respect to a particular product line of a manufacturer as well as the features and benefits of those particular products in comparison to other comparable products in a relatively quick and efficient manner.

The preferred system seeks to overcome these problems by linking these and other functions into a single system.

SUMMARY OF THE INVENTION

A computerized system is provided for providing a salesperson with assistance related to training and sales of parts corresponding to particular products. More particularly, a computerized system incorporating a data storage device, a display apparatus, a part selection device and a user interface mechanism is provided to enhance the efforts of a parts salesman. The data storage device electronically stores graphic and textual parts-related information including specifications, features and customer benefits. The display apparatus electronically displays portions of the graphic and textual information in order to provide training and sales assistance related to part features and customer benefits. The part selection device electronically selects a particular part by navigating through part choices menus based on stored Dart specifications. The user interface means

controls the operation of the display apparatus and the part selection device parts so that each of the respective parts are operatively coupled and related to one another.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a block diagram showing a preferred embodiment of the present computerized system.

FIG. **1A** is a block diagram showing a detailed depiction of the elements of the preferred embodiment data storage device.

FIG. **1B** is a block diagram showing a detailed depiction of the elements of the preferred embodiment part selection device.

FIG. **1C** is a block diagram showing a detailed depiction of the elements of the preferred embodiment display apparatus.

FIG. **1D** is a block diagram showing a detailed depiction of the elements of the preferred embodiment report generation apparatus.

FIG. **2** shows a flow chart diagramming a preferred embodiment selecting a battery by part number.

FIG. **3A** and **3B** show a flow chart diagramming a preferred embodiment selecting a battery by application.

FIG. **4** shows a flow chart diagramming a preferred embodiment selecting a battery by description.

FIG. **5** shows a preferred embodiment file structure for use in selecting a battery by application.

FIG. **6** shows a preferred embodiment file structure for use in selecting a battery by part number and description.

FIG. **7** shows a flow chart diagramming a preferred embodiment selecting a filter by part number.

FIG. **8A** and **8B** show a flow chart diagramming a preferred embodiment selecting a filter by application.

FIG. **9** shows a preferred embodiment file structure for use in selecting a filter by application.

FIG. **10** shows a preferred embodiment file structure for use in selecting a filter by part number.

FIG. **11** shows a flow chart diagramming a preferred embodiment selecting a remanufactured electric part by part number.

FIG. **12A** and **12B** show a flow chart diagramming a preferred embodiment selecting a remanufactured electric part by application.

FIG. **13** shows a preferred embodiment file structure for use in selecting a remanufactured electric part by application.

FIG. **14** shows a preferred embodiment file structure for use in selecting a remanufactured electric part by part number.

FIG. **15A** and **15B** show a flow chart diagramming a preferred embodiment selecting lubrication by application.

FIG. **16** shows a flow chart diagramming a preferred embodiment selecting lubrication by lube type.

FIG. **17** shows a preferred embodiment file structure for use in selecting lubrication by application.

FIG. **18** shows a preferred embodiment file structure for use in selecting lubrication by lube type.

FIG. **19** shows a flow chart diagramming a preferred embodiment selecting a bearing by a part number.

FIG. **20** shows a flow chart diagramming a preferred embodiment selecting a bearing by an OEM part number.

FIG. 21 shows a flow chart diagramming a preferred embodiment selecting a bearing by a part number to an OEM part number.

FIG. 22 shows a flow chart diagramming a preferred embodiment selecting a bearing by a partial OEM part number.

FIG. 23 shows a preferred embodiment file structure for use in selecting bearings.

FIGS. 24A, 24B, 24C, 24D, 24E, and 24F show a flow chart diagramming an example of operating a preferred embodiment computer system from a users point of view.

FIG. 25 is a representation of an example menu/display screen for use in the example described from the users point of view.

FIG. 26 is a representation of an example menu/display screen for use in the example described from the users point of view.

FIG. 27 is a representation of an example menu/display screen for use in the example described from the users point of view.

FIG. 28 is a representation of an example menu/display screen for use in the example described from the users point of view.

FIG. 29 is a representation of an example menu/display screen for use in the example described from the users point of view.

FIG. 30 is a representation of an .example menu/display screen for use in the example described from the users point of view.

FIG. 31 is a representation of an example menu/display screen for use in the example described from the users point of view.

FIG. 32 is a representation of an example menu/display screen for use in the example described from the users point of view.

FIG. 33 is a representation of an example menu/display screen for use in the example described from the users point of view.

FIG. 34 is a representation of an example menu/display screen for use in the example described from the users point of view.

FIG. 35 is a representation of an example menu/display screen for use in the example described from the users point of view.

FIG. 36 is a representation of an example menu/display screen for use in the example described from the users point of view.

FIG. 37 is a representation of an example printed report for use in the example described from a users point of view.

FIG. 38 is a representation of an example printed report for use in the example described from a users point of view.

FIG. 39 is a representation of an example menu/display screen for use in the example described from the users point of view.

FIG. 40 is a representation of an example menu/display screen for use in the example described from the users point of view.

FIG. 41 is a representation of an example menu/display screen for use in the example described from the users point of view.

FIG. 42 is a representation of an example menu/display screen for use in the example described from the users point of view.

FIG. 43 is a representation of an example menu/display screen for use in the example described from the users point of view.

FIG. 44 is a representation of an example menu/display screen for use in the example described from the users point of view.

FIG. 45 is a representation of an example menu/display screen for use in the example described from the users point of view.

FIG. 46 is a representation of an example menu/display screen for use in the example described from the users point of view.

FIG. 47 is a representation of an example menu/display screen for use in the example described from the users point of view.

FIG. 48 is a representation of an example menu/display screen for use in the example described from the users point of view.

FIG. 49 is a representation of an example menu/-graphic display screen for use in the example described from the users point of view.

FIG. 50 is a representation of an example graphic display screen for use in the example described from the users point of view.

FIG. 51 is a representation of an example graphic display screen for use in the example described from the users point of view.

FIG. 52 is a representation of an .example graphic display screen for use in the example described from the users point of view.

FIG. 53 is a representation of an example menu/-graphic display screen for use in the example described from the users point of view.

FIG. 54 is a representation of an example graphic display screen for use in the example described from the users point of view.

FIG. 55 is a representation of an example graphic display screen for use in the example described from the users point of view.

FIG. 56 is a representation of an example graphic display screen for use in the example described from the users point of view.

FIG. 57 is a representation of an example graphic display screen for use in the example described from the users point of view.

FIG. 58 is a representation of an example graphic display screen for use in the example described from the users point of view.

FIG. 59 is a representation of an example graphic display screen for use in the example described from the users point of view.

FIG. 60 is a representation of an example graphic display screen for use in the example described from the users point of view.

FIG. 61 is a representation of an example graphic display screen for use in the example described from the users point of view.

FIG. 62 is a representation of an example graphic display screen for use in the example described from the users point of view.

FIG. 63 is a representation of an example graphic display screen for use in the example described from the users point of view.

FIG. 64 is a representation of an example menu/-graphic display screen for use in the example described from the users point of view.

FIG. 65 is a representation of an example graphic display screen for use in the example described from the users point of view.

FIG. 66 is a representation of an example graphic display screen for use in the example described from the users point of view.

FIG. 67 is a representation of an example graphic display screen for use in the example described from the users point of view.

FIG. 68 is a representation of an example menu/-graphic display screen for use in the example described from the users point of view.

FIG. 69 is a representation of an example menu/-graphic display screen for use in the example described from the users point of view.

FIG. 70 is a representation of an example graphic display screen for use in the example described from the users point of view.

FIG. 71 is a representation of an example graphic display screen for use in the example described from the users point of view.

FIG. 72 is a representation of an example graphic display screen for use in the example described from the users point of view.

FIG. 73 is a representation of an example graphic display screen for use in the example described from the users point of view.

FIG. 74 is a representation of an example graphic display Screen for use in the example described from the users point of view.

FIG. 75 is a representation of an example graphic display screen for use in the example described from the users point of view.

FIG. 76 is a representation of an example graphic display screen for use in the example described from the users point of view.

FIG. 77 is a representation of an example graphic display screen for use in the example described from the users point of view.

FIG. 78 is a representation of an example graphic display screen for use in the example described from the users point of view.

FIG. 79 is a representation of an example graphic display screen for use in the example described from the users point of view.

FIG. 80 is a representation of an example graphic display screen for use in the example described from the users point of view.

FIG. 81 is a representation of an example graphic display screen for use in the example described from the users point of view.

FIG. 82 is a representation of an example graphic display screen for use in the example described from the users point of view.

FIG. 83 is a representation of an example graphic display screen for use in the example described from the users point of view.

FIG. 84 is a representation of an example graphic display screen for use in the example described from the users point of view.

FIG. 85 is a representation of an .example graphic display screen for use in the example described from the users point of view.

FIG. 86 is a representation of an example graphic display screen for use in the example described from the users point of view.

FIG. 87 is a representation of an example graphic display screen for use in the example described from the users point of view.

FIG. 88 is a representation of an example graphic display screen for use in the example described from the users point of view.

FIG. 89 is a representation of an example graphic display screen for use in the example described from the users point of view.

FIG. 90 is a representation of an example graphic display screen for use in the example described from the users point of view.

FIG. 91 is a representation of an example graphic display screen for use in the example described from the users point of view.

DETAILED DESCRIPTION

Referring now to FIG. 1, a computer system 100 is shown. The computer system 100 incorporates a display apparatus 102, a data storage device 104, a part selection device 106 and a user interface mechanism 108. The display apparatus 102 preferably is operatively interconnected to the data storage device 104 and the user interface mechanism 108. The data storage device 104 further preferably is operatively interconnected to the part selection device 106. In addition, part selection device 106 preferably is operatively interconnected to user interface mechanism 108.

Referring now to FIG. 1 in combination with FIG. 1A, the data storage device 104 electronically stores both graphic and textual part-related information 112 including specifications 124, features 132 and customer benefits 134. The specifications 124 may further include a manufacturers part number 126, a particular part's attributes 128 and a product description 130. The display apparatus 102 electronically displays portions of the stored graphic and textual information in order to provide training and sales assistance related to part features and customer benefits.

Referring now to FIG. 1 in combination with FIG. 1B and more particularly to part selection device 106, part selection device 106 provides for electronically selecting a particular part by navigating through a plurality of part choices menus. Those part choices menus could, for example, encompass a part number menu 140, a part attribute menu 142 or a product description menu 144. A part choices menu based on part numbers such as menu 140 would typically include a plurality of part numbers in a list which a user might select from. Preferably a part choices menu based on part attributes such as menu 142 would typically include a plurality of part attributes which may be shared by one or more parts. A part choices menu based on a product description would include a plurality of products or product classes such that, after navigation through several menus, a particular product description satisfying particular constraints can be found.

User interface mechanism 108 controls the operation of the display apparatus 102 and the part selection device 106 so that a user may use either part of computer system 100 or both parts of the computer system 100 at a particular instance.

The computer system 100 may further be enhanced by operating the part selection device 106 in a manner such that a particular part may be selected by selecting a choice in a first part choices menu and successively selecting a choice in a second part choices menu. For example, the first part choices menu may include a list

of generic types of parts and the second part choices menu may include a list of particular parts of a particular generic type. The part selection device **106** may further include a mechanism for generating a second part choices menu based upon choices made in the first part choices menu. In addition, part selection device **106** further may provide a mechanism for dynamically generating the first and second part choices menus from the electronically stored part-related information in data storage device **104**.

The computer system **100** may further be enhanced by including a report generation apparatus **100**, shown in FIG. **1**, and by storing part identity information **136** and part prices **138** in data storage device **104**. The computer system **100** may further include a report generation apparatus **110** which preferably is operatively interconnected to data storage device **104** and the user interface mechanism **108**. Referring now to FIG. **1**, FIG. **1B** and FIG. **1D** in combination, the report generation apparatus is typically configured to generate a printed report that includes part identity information **136** and part price **138** corresponding to the identified part. The report generation apparatus **110** may further include a mechanism for generating a printed report that includes specifications **124** related to the particular part identified in the report. Preferably, the report generation apparatus **110** further includes a parts dealer personalization mechanism **157** for generating a printed report customized for a particular parts dealer. In addition, the reports generation apparatus **110** preferably further includes customer personalization mechanism **158** for generating a printed report automatically personalized to a particular customer.

Computer system **100** may further be enhanced by electronically storing a generated report **114** in data storage device **104** as shown in FIG. **1A**, and by modifying report generation apparatus **110** to include a retrieve stored report mechanism. The retrieve stored report mechanism may be configured to retrieve a stored generated report **114** from the data storage device **104** and to include an update report mechanism **162** for revising the stored generated report to include updated parts related information. The report generation apparatus **110** may further be enhanced by including a mechanism for generating a report including graphically displayed part-related information, a mechanism for printing a report in a plurality of colors. For example, a generated report includes graphics printed in red, green and black to enhance the readability of the printed report or the overall appearance of the printed report.

Preferred computer system **100** further incorporates within the data storage device **104** a security access mechanism **118** for preventing access to portions of the electronically stored information without proper authorization. Such a data storage device **104** also typically includes an authorization mechanism **120** for providing proper authorization to the security access mechanism, thereby allowing access to portions of the electronically stored information to which access was previously prevented. Such a combination of a security access mechanism **118** and authorization mechanism **120** may comprise of a data inscription and password protection scheme, a security card and security card reader, a key and lock mechanism, or combination lock mechanism.

Preferred data storage device **104** further includes a customization mechanism **122** for customizing the protected stored parts-related information after proper authorization has been provided by the authorization mechanism **120**. For example, a user may wish to prevent other users from viewing some portion of the parts-related information stored within the data storage device **104**. Alternatively, a particular user may wish to prevent other users from modifying particular information stored within data storage device **104** without his or her authorization. Such stored information which a user may desire to protect in this manner could be pricing information on part numbers or customer-related information.

Preferred computer system **100** comprises a system for generating and electronically storing a customer products database **116**, as shown in FIG. **1A**, through the use of the parts selection device **106** in combination with the data storage device **104**. In particular, with such a system, a user may select particular products used by a customer through the part selection device **106** and subsequently store that information in a customer products database **116** within the data storage device **104**. Subsequently, the part selection device **106** can retrieve information from the customer products database **116** and generate a customer parts list **146**, as shown in FIG. **1B**, corresponding to at least a portion of the products used by the customer.

Computer system **100** may be incorporated for use in a portable personal computer or a desktop personal computer. Alternatively, computer system **100** may reside at least in part on an electronic computer network so that one or more users can share electronically stored parts-related information via the network.

Preferred computer system **100** incorporates into display apparatus **102** a mechanism for sequential display generation **148** as shown in FIG. **1C**. The sequential display generation mechanism **148** may be configured to generate a sequential display of graphic and textual information including portions of the stored graphic and textual parts related information within data storage device **104**. Such an enhancement may further be enhanced by providing a color sequence generation mechanism **150** for displaying graphic and textual information in a plurality of colors. Another preferred enhancement to such a sequential display generation mechanism **148** is a text display generation customization mechanism which allows a user to generate custom textual displays for use in a sequential display of graphic and textual information. For instance, a parts dealer may wish to incorporate into such a sequential display information about the parts display dealership, about advantages to particular parts manufacturers or specific parts pricing information. Furthermore, such a sequential display generation mechanism **148** may comprise a sequential generation customization mechanism wherein a user may customize the sequence of displaying graphic and textual information to suit his or her particular needs. In addition, display apparatus **102** may also be enhanced by incorporating an animated demonstration generation mechanism **156** for generating an animated demonstration. For example, an animated demonstration of how a particular part or combination of parts works or particular features of parts may be very informative.

The following is a description of a preferred embodiment computerized system for providing a salesperson with assistance related to training and sales of parts corresponding to particular products. The system as generally described in FIG. **1**, **1A**, **1B**, **1C** and **1D** will further be detailed in the following preferred embodi-

ment discussion. In the preferred embodiment discussion that follows, the user may select from several generic types of parts to look up a particular part under a cross-referencing/parts selection procedure. In the preferred embodiment, the types of parts under the cross-referencing/parts selection procedure include batteries, filters, remanufactured electric parts, lubrication and bearings.

Referring now more particularly to the preferred battery cross-referencing section as depicted in FIG. 2, 3A, 3B, 4, 5 and 6, a user may choose a battery by specifying a part number, equipment application or battery specifications. More particularly, FIG. 2 is a flow chart diagramming a preferred procedure for selecting a battery by a part number. Upon selecting the choice of specifying a battery by part number 200, a user is prompted to enter a part number 202. Subsequently, part selection device 206 will check if the part number is valid 204. If the part number is not valid, part selection device 106 will prompt the user to enter a part number 202. Otherwise, if the part number is valid, the part selection device 106 will display particular part information 206 and select that particular part 208. To select that particular part 208, part selection device 106 accesses the battery information 300 stored in data storage device 104 and shown in FIG. 6 to choose a particular part 250. By using the cross-reference file 294 in conjunction with the part number, a particular set of information is retrieved from battery information 300. Subsequently, the part selection device 106 ends the procedure get part by part number for battery 210.

Alternatively, a user may choose to pick a particular battery by specifying a particular equipment application for the battery. In choosing the particular equipment application, part selection device 106 preferably will go through a set of steps as depicted in the flow chart shown in FIG. 3A and 3B. In choosing to pick a part by equipment application 212, part selection device 106 will retrieve information stored in data storage device 104.

The information stored in data storage device 104 preferably is in a structured form 270 as depicted in FIG. 5. The preferred structured file format 270 for batteries comprises several records including a first and second pointer as well as subobject count information. The records shown are configured in a hierarchical format with seven layers of hierarchy. In the preferred embodiment, on the first level of the hierarchy, are records for info 1 data. Each record for info 1 data includes a pointer 272 to particular information for that particular info 1 data, a pointer 274 to the next record of info 1 data and a count of subobjects 276 for the set records related to that particular info 1 data record. The subsequent record following the first info 1 record in preferably the first subobject related to the first info 1 record or more specifically a record related to info 2 data including a pointer 278 to the info 2 data and a pointer 280 to the next info 2 record also related to that particular info 1 data record which was selected. This hierarchy of records continues further down into the record including a pointer 282 to info 3 data. Similarly, the next record shown includes a pointer 284 to info 4 data, with the next record including a pointer 286 to info 5 data. Furthermore, the next record is shown including a pointer 288 to info 6 data. Finally, the following record preferably includes BCI group and cold cranking amps data 290 for a particular battery, with the next record including BCI group and cold cranking amps data 292 for another battery. It will be appreciated by those skilled in the art that the above discussion was merely a simple example of what a structure form 270 might include. The form 270 might further include more records at each level of the hierarchy to accommodate addition part data in the structured form 270.

Referring now to FIG. 3A and 3B, after a user chooses to select a particular battery by equipment application 212, preferred part selection device 106 gets and displays section 1 information at 214. This section 1 information may be derived from all records in file format for battery cross-reference 270 which have a pointer 272 to info 1 data. The information may be derived by accessing file 270 and the first record containing a pointer 272 to info 1 data and subsequently accessing each record pointed to by a pointer 274 which points to the next record having a pointer to info 1 data. This process is typically repeated until the pointer which points to the next record having a pointer to info 1 data does not contain a pointer to another record having a pointer to info 1 data.

Subsequently, a user typically selects one of the elements from the section 1 information 216 and the part selection device 106 determines whether other sections are needed to particularly define the equipment application 218. If another section level is not needed to completely define the battery for a particular equipment application, part selection device 106 will display part information 248. Otherwise, part selection device 106 will get and display section 2 information 220 from file 270 records in a similar manner as was used to get and display section 1 information. These records typically include the first record following the info 1 record selected in section 1 choosing step 216, wherein the record following the first record comprises a pointer 278 to info 2 data, and further includes data derived from all records in the sequence of records including the pointer to the next info 2 data record.

Subsequently, a user typically selects one of the elements from the section 2 information 220 and the part selection device 106 checks if other sections are needed to particularly define the equipment application 224. If another section level is not needed to completely define the battery for a particular equipment application, part selection device 106 displays part information 248. Otherwise, part selection device 106 will get and display section 3 information 226 from file 270 records in a similar manner as was used to get and display section 1 information. These records typically include the first record following the info 2 record selected in section 2 choosing step 222, wherein the record following the first record comprises a pointer 282 to info 3 data, and further includes data derived from all records in the sequence of records including the pointer to the next info 3 data record.

Subsequently, a user may select one of the elements from the section 3 information 228 and the part selection device 106 checks if other sections are needed to particularly define the equipment application 230. If another section level is not needed to completely define the battery for a particular equipment application, part selection device 106 displays part information 248. Otherwise, part selection device 106 will get and display section 4 information 232 from file 270 records in a similar manner as was used to get and display section 1 information. These records would include the first record following the info 3 record selected in section 3 choosing step 228 wherein the record following the first

record comprises a pointer **284** to info **4** data and would further include data derived from all records in the sequence of records including the pointer to the next info **4** data record.

Subsequently, a user typically selects one of the elements from the section **4** information **234** and the part selection device **106** checks if other sections are needed to particularly define the equipment application **236**. If another section level is not needed to completely define the battery for a particular equipment application, part selection device **106** displays part information **248**. Otherwise, part selection device **106** will get and display section **5** information **238** from file **270** records in a similar manner as was used to get and display section **1** information. These records would include the first record following the info **4** record selected in section **4** choosing step **234** wherein the record following the first record comprises a pointer **286** to info **5** data and would further include data derived from all records in the sequence of records including the pointer to the next info **5** data record.

Subsequently, a user may select one of the elements from the section **5** information **240** and the part selection device **106** checks if other sections are needed to particularly define the equipment application **242**. If another section level is not needed to completely define the battery for a particular equipment application, part selection device **106** displays part information **248**. Otherwise, part selection device **106** will get and display section **6** information **244** from file **270** records in a similar manner as was used to get and display section **1** information. These records would include the first record following the info **5** record selected in section **5** choosing step **240** wherein the record following the first record comprises a pointer **288** to info **6** data and would further include data derived from all records in the sequence of records including the pointer to the next info **6** data record.

Subsequently, a user typically selects one of the elements from the section **6** information **246** and part selection device **106** displays part information **248**.

After displaying the part information **248**, part selection device **106** accesses the battery information **300** stored in data storage device **104** and shown in FIG. **6** to choose a particular part **250**. By using the cross-reference file **294** in conjunction with the particular BCI group and designated cold cranking amps for the particular part, a particular set of information is retrieved from battery information **300**. Subsequently, the part selection device **106** ends the get part by applications for battery procedure **252**.

Alternatively, a user may choose to pick a particular battery by specifying a particular battery description. In specifying the particular battery description, part selection device **106** preferably will go through a set of steps as depicted in the flow chart shown in FIG. **4**. In choosing a particular battery by battery description **254**, preferred part selection device **106** will retrieve parts-related information by using cross-reference file **294** in combination with battery information **300** depicted in FIG. **6**. The cross-reference file **294** and battery information **300** are stored in data storage device **104**. The part selection device **106** displays battery description types **256**. These description types may include BCI number, cold cranking amps, reserve capacity, voltage, length of battery, width of battery, height of battery, warranty period, and price of the battery. The part selection device **106** prompts a user to choose a description type **258**. Upon a user specifying a particular parameter for the battery description **260**, the part selection device **106** checks to see if the description is valid **262**. If the description is not valid, then the parts selection device **106** returns to prompting the user to choose a description type **258**. Otherwise, if the description is valid, the part selection device **106** displays the part information which is defined by the description entered **264**. This part information may include more than one part if more than one part meets the constraints entered in the part description **260**. A user typically will select as much of the battery description as is needed to specify only a few battery parts. Subsequently, preferred part selection device **106** prompts the user to select a particular part **266** from the displayed part information. Upon selection of the particular part, the part selection device accesses the cross-reference file **294** to retrieve the particular part information from battery information **300**. Subsequently, the part selection device **106** ends the get part by description for battery procedure **268**.

Referring now more particularly to the filter cross-referencing section as depicted in FIG. **7**, **8A**, **8B**, **9** and **10**, a user may choose a filter by specifying a part number or equipment application. More particularly, FIG. **7** is a flow chart diagramming a preferred procedure for selecting a filter by a part number, and FIG. **10** shows a preferred embodiment file structure containing filter information stored in data storage device **104** for use in selecting a filter by part number. Upon selecting the choice of specifying a filter by part number **302**, a user is prompted to enter a part number **304**.

Subsequently, part selection device **106** will check if the part number is valid **306**. The validity checking is accomplished by finding an HPTR record in the HPTR file **381** which is substantially similar to the part number entered. The HPTR file **381** comprises HPTR records sorted in part number order. Each HPTR record comprises a pointer to a record within an HTAB file **380** comprising a part number. If the part number is not valid, part selection device **106** will prompt the user to enter a part number **304** once again.

Otherwise, if the part number is valid, then part selection device **106** will display manufacturers of the part number **308** and prompt the user to select a manufacturer of the part number. The list of manufacturers displayed is derived from data storage device **104** by accessing the same record number in the DPTR file **383** as was found to be a valid part number in the validity checking. The DPTR file **383** comprises the same number of records as the HPTR file **381** sorted in the same order by part number. Each DPTR record includes a pointer **384** to a manufacturer in a MFGR file **386** and a pointer **385** to an XREF file **389**. The XREF file **389** is a file sorted by part number comprising records including a pointer **390** into a record within DPTR file **383**, a pointer into INFO file **388**, a pointer **394** to another XREF record and the price **396** of the part.

For example, a list of manufacturers is derived by taking HPTR record number (e.g., the record including pointer **382**) of the valid part number and using it to access the same record number in the DPTR file **383**. The record number in the DPTR file **383** corresponding to the same record number comprises a pointer (e.g. pointer **384**) to a manufacturer of that part number. The manufacturer is retrieved by accessing the data in the record in the MFGR file **386** pointed to by the pointer (e.g. pointer **384**). The DPTR file **383** record also includes a pointer (e.g. **385**) to a record in the XREF file

389. This XREF record may include a pointer back into the DPTR file 383 (e.g. pointer 390) which includes a pointer (e.g. 387) to another record in the MFGR file 386 comprising manufacturer of that part. The process of looking up more records in the MFGR file 386 comprises searching records sequentially in the sorted DPTR file 383 until the HPTR 384 record is not related to the selected part number being considered for inclusion in the list of manufacturers. At this point the part selection device 106 knows all of the manufacturers of the part number entered.

Upon selection of a manufacturer 310, the part selection device 106 will display the particular part information 312 and select a particular part. The part information is derived from the data storage device 104 by access information pointed to by the records of the DPTR file 383 associated with the part number entered. The specific part information is accessed from the records pointed to in the XREF file 389 and subsequently the record pointed to in the INFO file 388. Upon selection of a particular part 314, part selection device 106 accesses all of the needed filter information 388 stored in data storage device 104 to select a particular part. Subsequently, the part selection device 106 ends the procedure get part by part number for filter 316.

Alternatively, a user may choose to pick a particular filter by specifying a particular equipment application for the filter. In choosing the particular equipment application, part selection device 106 preferably will go through a set of steps as depicted in the flow chart shown in FIG. 8A and 8B. In choosing to pick a part by equipment application 318, part selection device 106 will retrieve information stored in data storage device 104.

The information stored in data storage device 104 preferably is in a structured form 358 as depicted in FIG. 9. The preferred structured file format 358 for filter comprises several records including a first and second pointer as well as subobject count information. The records are configured in a hierarchical format with six layers of hierarchy. In the preferred embodiment, on the first level of the hierarchy are records for info 1 data. Each record for info 1 data includes a pointer 360 to particular information for that particular info 1 data, a pointer 362 to the next record of info 1 data and a count of subobjects 364 for the set records related to that particular info 1 data record. The subsequent record following the first info 1 record is typically the first subobject related to the first info 1 record or more specifically a record related to info 2 data including a pointer 366 to the info 2 data and a pointer 368 to the next info 2 record also related to that particular info 1 data record which was selected. This hierarchy of records continues further down into the record including a pointer 370 to info 3 data. Similarly, the next record typically includes a pointer 372 to info 4 data, with the next record including a pointer 374 to info 5 data. Finally, the following record typically includes a pointer to an XREF record 376 for a particular filter, with the next record including a pointer to an XREF record 378 for another filter. It will be appreciated by those skilled in the art that the above discussion was merely a simple example of what a structure form 358 might include. The form 358 might further include more records at each level of the hierarchy to accomodate addition part data in the structured form 358.

Referring now to FIG. 8A and 8B, after a user chooses to select a particular filter by equipment application 318, part selection device 106 gets and displays section 1 information at 319. This section i information may be derived from all records in file format for filter cross-reference 358 which have a pointer 360 to info 1 data. The information is typically derived by accessing file 358 and the first record containing a pointer 360 to info 1 data and subsequently accessing each record pointed to by a pointer 362 which points to the next record having a pointer to info 1 data. This process is typically repeated until the pointer which points to the next record having a pointer to info 1 data does not contain a pointer to another record having a pointer to info 1 data.

Subsequently, a user may select one of the elements from the section 1 information 320 and the part selection device 106 checks if other sections are needed to particularly define the equipment application 322. If another section level is not needed to completely define the filter for a particular equipment application, part selection device 106 will display part information 352. Otherwise, part selection device 106 will get and display section 2 information 324 from file 358 records in a similar manner as was used to get and display section 1 information. These records typically include the first record following the info 1 record selected in section 1 choosing step 320 wherein the record following the first record comprises a pointer 366 to info 2 data and further includes data derived from all records in the sequence of records including the pointer to the next info 2 data record.

Subsequently, a user typically selects one of the elements from the section 2 information 326 and the part selection device 106 checks if other sections are needed to particularly define the equipment application 328. If another section level is not needed to completely define the filter for a particular equipment application, part selection device 106 displays part information 352. Otherwise, part selection device 106 will get and display section 3 information 330 from file 358 records in a similar manner as was used to get and display section 1 information. These records typically include the first record following the info 2 record selected in section 2 choosing step 326 wherein the record following the first record comprises a pointer 370 to info 3 data and further include data derived from all records in the sequence of records including the pointer to the next info 3 data record.

Subsequently, a user would select one of the elements from the section 3 information 332 and the part selection device 106 checks if other sections are needed to particularly define the equipment application 334. If another section level is not needed to completely define the filter for a particular equipment application, part selection device 106 displays part information 352. Otherwise, part selection device 106 will get and display section 4 information 336 from file 358 records in a similar manner as was used to get and display section 1 information. These records typically include the first record following the info 3 record selected in section 3 choosing step 332 wherein the record following the first record comprises a pointer 372 to info 4 data and further includes data derived from all records in the sequence of records including the pointer to the next info 4 data record.

Subsequently, a user typically selects one of the elements from the section 4 information 338 and the part selection device 106 checks if other sections are needed to particularly define the equipment application 340. If

another section level is not needed to completely define the filter for a particular equipment application, part selection device **106** displays part information **352**. Otherwise, part selection device **106** will get and display section **5** information **342** from file **358** records in a similar manner as was used to get and display section **1** information. These records typically include the first record following the info **4** record selected in section **4** choosing step **338** wherein the record following the first record comprises a pointer **374** to info **5** data and further include data derived from all records in the sequence of records including the pointer to the next info **5** data record.

Subsequently, a user typically selects one of the elements from the section **5** information **344**. This in turn typically fully specifies the filter, with part selection device **106** displaying part information **352**. The part information is derived from a pointer **370** to an XREF record and typically further includes data derived from all records in the sequence of records pointed to by the particular XREF record.

After displaying the part information **352**, part selection device **106** accesses the filter information stored in data storage device **104** and shown in FIG. **10** to choose a particular part **354**. Subsequently, the part selection device **106** ends the get part by applications for filter procedure **356**.

Referring now more particularly to the remanufactured electric parts cross-referencing section as depicted in FIG. **11**, **12A**, **12B**, **13** and **14**, a user may choose a remanufactured electric part by specifying a part number or equipment application. More particularly, FIG. **11** is a flow chart diagramming a procedure for selecting a remanufactured electric part by a part number and FIG. **14** shows a preferred embodiment file structure containing remanufactured electric parts information stored in data storage device **104** for use in selecting a remanufactured electric part filter by part number. Upon selecting the choice of specifying a remanufactured electric part by part number **400**, a user is prompted to enter a part number **402**.

Subsequently, part selection device **106** will check if the part number is valid **404**. The validity checking is accomplished by finding an DPTR record in the DPTR file **471** which is substantially similar to the part number entered. The DPTR file **471** comprises DPTR records sorted in part number order. Each DPTR record comprises a part number **472**, a pointer **474** to a manufacturer in a MFGR file **470** and a pointer **476** to an XREF file **479**. If the part number is not valid, part selection device **106** will prompt the user to enter a part number **402** once again.

Otherwise, if the part number is valid, then part selection device **106** will display part information of the part number **406** and select a particular part. The particular part displayed is derived from data storage device **104** by accessing the record in the XREF file **479** pointed to by pointer **476** of the DPTR record found in the validity checking. The XREF file **479** is a file sorted by part number comprising records including a pointer **480** into a record within DPTR file **471**, a pointer into INFO file **478**, a pointer **484** to another XREF record and the price **486** of the part.

Upon selection of a particular part **408** by the user, part selection device **106** accesses all of the needed remanufactured electric part information stored in data storage device **104** to select a particular part. Subsequently, the part selection device **106** ends the procedure get part by part number for remanufactured electric part **410**.

Alternatively, a user may choose to pick a particular remanufactured electric part by specifying a particular equipment application for the remanufactured electric part. In choosing the particular equipment application, part selection device **106** preferably will go through a set of steps as depicted in the flow chart shown in FIG. **12A** and **12B**. In choosing to pick an application by equipment application **412**, part selection device **106** will retrieve information stored in data storage device **104**.

The information stored in data storage-device **104** preferably is in a structured form **448** as depicted in FIG. **13**. The preferred structured file format **448** for remanufactured electric parts comprises several records including a first and second pointer as well as subobject count information. The records shown are configured in a hierarchical format with six layers of hierarchy. In the preferred embodiment, on the first level of the hierarchy are records for info **1** data. Each record for info **1** data includes a pointer **450** to particular information for that particular info **1** data, a pointer **452** to the next record of info **1** data and a count of subobjects **454** for the set records related to that particular info **1** data record. The subsequent record following the first info **1** record is typically the first subobject related to the first info **1** record or more specifically a record related to info **2** data including a pointer **456** to the info **2** data and a pointer **458** to the next info **2** record also related to that particular info **1** data record which was selected. This hierarchy of records continues further down into the record including a pointer **460** to info **3** data. Similarly, the next record typically includes a pointer **462** to info **4** data, with the following record including a pointer **464** to info **5** data. Finally, the following record typically includes a pointer to an XREF record **466** for a particular remanufactured electric part, with the next record including a pointer to an XREF record **468** for another remanufactured electric part. It will be appreciated by those skilled in the art that the above discussion was merely a simple example of what a structure form **448** might include. The form **448** might further include more records at each level of the hierarchy to accommodate addition part data in the structured form **448**.

Referring now to FIG. **12A** and **12B**, after a user chooses to select a particular remanufactured electric part by equipment application **412**, part selection device **106** gets and displays section **1** information at **414**. This section **1** information is typically derived from all records in file format for remanufactured electric parts cross-reference **448** which have a pointer **450** to info **1** data. The information is typically derived by accessing file **448** and the first record containing a pointer **450** to info **1** data and subsequently accessing each record pointed to by a pointer **452** which points to the next record having a pointer to info **1** data. This process is typically repeated until the pointer which points to the next record having a pointer to info **1** data does not contain a pointer to another record having a pointer to info **1** data.

Subsequently, a user may select one of the elements from the section **1** information **416** and the part selection device **106** checks if other sections are needed to particularly define the equipment application **418**. If another section level is not needed to completely define the remanufactured electrical part for a particular equipment application, part selection device **106** will

display part information **442**. Otherwise, part selection device **106** will get and display section 2 information **420** from file **448** records in a similar manner as was used to get and display section **1** information. These records include the first record following the info **1** record selected in section **1** choosing step **416** wherein the record following the first record comprises a pointer **456** to info **2** data and further include data derived from all records in the sequence of records including the pointer to the next info 2 data record.

Subsequently, a user typically selects one of the elements from the section **2** information **422** and the part selection device **106** checks if other sections are needed to particularly define the equipment application **424**. If another section level is not needed to completely define the remanufactured electric part for a particular equipment application, part selection device **106** displays part information **442**. Otherwise, part selection device **106** will get and display section **3** information **426** from file **448** records in a similar manner as was used to get and display section **1** information. These records typically include the first record following the info 2 record selected in section **2** choosing step **422** wherein the first following the first record comprises a pointer **460** to info **3** data and further include data derived from all records in the sequence of records including the pointer to the next info **3** data record.

Subsequently, a user typically selects one of the elements from the section **3** information **428** and the part selection device **106** checks if other sections are needed to particularly define the equipment application **430**. If another section level is not needed to completely define the remanufactured electric part for a particular equipment application, part selection device **106** displays part information **442**. Otherwise, part selection device **106** get and display section **4** information **432** from file **448** records in a similar manner as was used to get and display section **1** information. These records typically include the first record following the info **3** record selected in section **3** choosing step **428** wherein the record following the first record comprises a pointer **462** to info **4** data and further include data derived from all records in the sequence of records including the pointer to the next info **4** data record.

Subsequently, a user may select one of the elements from the section **4** information **434** and the part selection device **106** checks if other sections are needed particularly define the equipment application **436**. another section level is not needed to completely define the remanufactured electrical part for a particular equipment application, part selection device **106** displays part information **442**. Otherwise, part selection device]06 will get and display section **5** information **438** from file **448** records in a similar manner as was used to get and display section **1** information. These records typically include the first record following the info **4** record selected in section **4** choosing step **434** wherein the record following the first record comprises a pointer **464** to in#o **5** data and would further include data derived from all records in the sequence of records including the pointer to the next info **5** data record.

Subsequently, a user typically selects one of the elements from the section **5** information **440**. This in turn typically fully specifies the remanufactured electric part, with part selection device **106** displaying part information **442**. The part information is derived from a pointer **466** to an XREF record and typically further includes data derived from all records in the sequence of records pointed to by the particular XREF record.

After displaying the part information **442**, part selection device **106** accesses the remanufactured electric part information stored in data storage device **104** and shown in FIG. **14** to choose a particular part **444**. Subsequently, the part selection device **106** ends the get part by applications for remanufactured electric part procedure **446**.

Referring now more particularly to the lubrication cross-referencing section as depicted in FIG. **15A**, **15B**, **16**, **17** and **18**, a user may choose lubrication by specifying a lube type or equipment application. More particularly, FIG. **16** is a flow chart diagramming a procedure for selecting lubrication by lube type, and FIG. **18** shows a preferred embodiment file structure containing lubrication information stored in data storage device **104** for use in selecting lubrication by lube type. Upon selecting the choice of specifying lubrication by lube type **524**, the part selection device **106** displays types of lubrication **526** and a user is prompted to select a type of lube **528**. The lube types are derived from accessing the lubrication information file **570** stored in data storage device **104**.

After a user selects a lube type **528**, the part selection device **106** checks if the user wants to select another lube type. If the user indicates the desire to select another lube type, the part selection device **106** displays the lube types **526** once again.

Otherwise, if the user does not indicate that he or she desires to select another lube type, then part selection device **106** will display quantity information **532** corresponding to the lube types selected and prompt the user to Select the quantity of the various lube types desired. The quantity information is derived from accessing information in lubrication information file **570** for each type of lubrication selected. Upon selection of the quantity desired for each type of lubrication selected, the part selection device **106** ends the procedure get part by part number for remanufactured electric part **536**.

Alternatively, a user may choose to pick a particular lubrication by specifying a particular equipment application for the lubrication. In choosing the particular equipment application, part selection device **106** preferably will go through a set of steps as depicted in the flow chart shown in FIG. **15A** and **15B**. In choosing to pick an application by equipment application **490**, part selection device **106** will retrieve information stored in data storage device **104**.

The information stored in data storage device **104** preferably is in a structured form **538** as depicted in FIG. **17**. The preferred structured file format **538** for lubrication comprises several records including a first and second pointer as well as subobject count information. The records preferably are configured in a hierarchical format with six layers of hierarchy. In the preferred embodiment, on the first level of the hierarchy are records for info **1** data. Each record for info **1** data includes a pointer **540** to particular information for that particular info **1** data, a pointer **542** to the next record of info **1** data and a count of subobjects **544** for the set records related to that particular info **1** data record. The subsequent record following the first info **1** record is typically the first subobject related to the first info **1** record or more specifically would be a record related to info **2** data including a pointer **546** to the info **2** data and a pointer **548** to the next info **2** record also related to that particular info **1** data record which was selected.

This hierarchy of records continues further down into the record including a pointer **560** to info **3** data. Similarly, the next record typically includes a pointer **562** to info **4** data, with the following record including a pointer **564** to info **5** data. Finally, the next record typically includes type and quantity **566** for a particular lube with the next record including type and quantity **568** for another lube. It will be appreciated by those skilled in the art that the above discussion was merely a simple example of what a structure form **538** might include. The form **538** might further include more records at each level of the hierarchy to accommodate addition part data in the structured form **538**.

Referring now to FIG. **15**A and **15**B, after a user chooses to select a particular lube by equipment application **490**, part selection device **106** gets and displays section **1** information at **492**. This section **1** information is typically derived from all records in file format for lubrication cross-reference **538** which have a pointer **540** to info **1** data. The information is typically derived by accessing file **538** and the first record containing a pointer **540** to info **1** data and subsequently accessing each record pointed to by a pointer **542** which points to the next record having a pointer to info **1** data. This process is repeated until the pointer which points to the next record having a pointer to info **1** data does not contain a pointer to another record having a pointer to info **1** data.

Subsequently, a user typically selects one of the elements from the section **1** information **494** and the part selection device **106** checks if other sections are needed to particularly define the equipment application **496**. If another section level is not needed to completely define the lube for a particular equipment application, part selection device **106** will display part information **520**. Otherwise, part selection device **106** will get and display section **2** information **498** from file **538** records in a similar manner as was used to get and display section **1** information. These records typically include the first record following the info **1** record selected in section **1** choosing step **494** wherein the record following the first record comprises a pointer **546** to info **2** data and would further include data derived from all records in the sequence of records including the pointer to the next info **2** data record.

Subsequently, a user may select one of the elements from the section **2** information **500** and the part selection device **106** checks if other sections are needed to particularly define the equipment application **502**. If another section level is not needed to completely define the lube for a particular equipment application, part selection device **106** displays part information **520**. Otherwise, part selection device **106** will get and display section **3** information **504** from file **538** records in a similar manner as was used to get and display section **1** information. These records typically include the first record following the info **2** record selected in section **2** choosing step **500** wherein the record following the first record comprises a pointer **560** to info **3** data and would further include data derived from all records in the sequence of records including the pointer to the next info **3** data record.

Subsequently, a user typically selects one of the elements from the section **3** information **538** and the part selection device **106** checks if other sections are needed to particularly define the equipment application **508**. If another section level is not needed to completely define the lube for a particular equipment application, part selection device **106** displays part information **520**. Otherwise, part selection device **106** will get and display section **4** information **510** from file **538** records in a similar manner as was used to get and display section **1** information. These records typically include the first record following the info **3** record selected in section **3** choosing step **506** wherein the record following the first record comprises a pointer **562** to info **4** data and would further include data derived from all records in the sequence of records including the pointer to the next info **4** data record.

Subsequently, a user may select one of the elements from the section **4** information **512** and the part selection device **106** checks if other sections are needed to particularly define the equipment application **514**. If another section level is not needed to completely define the lube for a particular equipment application, part selection device **106** displays part information **520**. Otherwise, part selection device **106** will get and display section **5** information **516** from file **538** records in a similar manner as was used to get and display section **1** information. These records typically include the first record following the info **4** record selected in section **4** choosing step **512** wherein the record following the first record comprises a pointer **564** to info **5** data and would further include data derived from all records in the sequence of records including the pointer to the next info **5** data record.

Subsequently, a user may select one of the elements from the section **5** information **518**. This in turn typically fully specifies the lubrication needed, thus part selection device **106** displays part information **520**. The part information typically is derived from the lubrication information file **570** and the stored information concerning type and quantity of lube.

Subsequently, the part selection device **106** ends the get part by applications for lube procedure **522**.

Referring now more particularly to the bearing cross-referencing section as depicted in FIG. **19**, **20**, **21**, **22** and **23**. Within the bearing cross-referencing section of the preferred embodiment, a user may choose a bearing by specifying a part number, OEM part number, part number to OEM part number, or by partial OEM part number. More particularly, FIG. **19** is a flow chart diagramming a procedure for selecting a bearing by a part number and FIG. **23** shows a preferred embodiment file structure containing bearing information stored in data storage device **104** for use in selecting a bearing by part number. Upon selecting the choice of specifying a bearing by part number **572**, a user is prompted to enter a part number **574**.

Subsequently, part selection device **106** will check if the part number is valid **576**. The validity checking is accomplished by finding an HPTR record in the HPTR file **637** which is substantially similar to the part number entered. The HPTR file **637** comprises HPTR records sorted in part number order. Each HPTR record comprises a pointer to a record within an HTAB file **636** comprising a part number. If the part number is not valid, part selection device **106** will prompt the user to enter a part number **574** once again.

Otherwise, if the part number is valid then part selection device **106** will query the user whether or not the user wants to enter another parts number **578**. If the user wants to enter another parts number, the part selection device **106** will prompt the user to enter a part number **574**. Otherwise, part selection means **106** displays the part information **580**. The part information

displayed is derived from data storage device **104** by accessing the same record number in the DPTR file **641** as was found to be a valid part number in the validity checking. The DPTR file **641** comprises the same number of records as the HPTR file **637** sorted in the same order by part number. Each DPTR record includes a pointer **640** to a manufacturer in a MFGR file **644** and a pointer **642** to either an CHAIN1 file **646** when the selected part number is an OEM part number or to an XREF file **651** when the selected part number is not an OEM part number. The CHAIN1 file **646** comprises records including one or more pointers to records within XREF file **651**. The XREF file **651** is a file sorted by part number and comprises records including a pointer **650** into a record within DPTR file **641**, a pointer into INFO file **652**, a pointer **654** to CHAIN2 file **662** and the price **656** of the part. The CHAIN2 file **662** comprises records including one or more pointers to records within XREF file **651**.

For example, part information is derived by taking HPTR record number (e.g. the record including pointer **638**) of the valid part number and using it to access the same record number in the DPTR file **641**. The record number in the DPTR file **641** corresponding to the same record number comprises a pointer (e.g. pointer **642**) to a record in the XREF file **651**. This XREF record includes a pointer into the INFO file **640** (e.g. pointer **652**). As a result, the part information pointed to by pointer **652** in INFO file **651** can be retrieved for the display of part information **580**.

The specific part information is accessed from the records pointed to in the XREF file **651** and subsequently the record pointed to in the INFO file **640**. Upon selection of a particular part **582**, part selection device **106** accesses all of the needed bearing information stored in data storage device **104** to select a particular part. Subsequently, the part selection device **106** ends the procedure get part by part number for bearing **584**.

Alternatively a user may choose a bearing by OEM part number. FIG. **20** is a flow chart diagramming a procedure for selecting a bearing by an OEM part number and FIG. **23** shows a preferred embodiment file structure containing bearing information stored in data storage device **104** for use in selecting a bearing by part number. Upon selecting the choice of specifying a bearing by OEM part number **586**, a user is prompted to enter a part number **588**.

Subsequently, part selection device **106** will check if the part number is valid **590**. The validity checking is accomplished by finding an HPTR record in the HPTR file **637** which is substantially similar to the part number entered. The HPTR file **637** comprises HPTR records sorted in part number order. Each HPTR record comprises a pointer to a record within an HTAB file **636** comprising a part number. If the part number is not valid, part selection device **106** will prompt the user to enter a part number **588** once again.

Otherwise, if the part number is valid then part selection device **106** will display manufacturers of the part number **592** and prompt the user to select a manufacturer of the part number. The list manufacturers displayed is derived from data storage device **104** by accessing the same record number in the DPTR file **641** as was found to be a valid part number in the validity checking. The DPTR file **641** comprises the same number of records as the HPTR file **637** sorted in the same order by part number. Each DPTR record includes a pointer **640** to a manufacturer in a MFGR file **644** and a pointer **642** to either a CHAIN1 file **646** when the selected part number is an OEM part number or to an XREF file **651** when the selected part number is not an OEM part number. The XREF file **651** is a file sorted by part number comprising records including a pointer **650** into a record within DPTR file **641**, a pointer **652** into INFO file **640**, a pointer **654** to CHAIN2 file **662** and the price **656** of the part. The CHAIN2 file **662** comprises records including one or more pointers to records within XREF file **651**.

For example, a list of manufacturers is derived by taking HPTR record number (e.g. the record including pointer **638**) of the valid part number and using it to access the same record number in the DPTR file **641**. The record number in the DPTR file **641** corresponding to the same record number comprises a pointer (e.g. pointer **640**) to a manufacturer of that part number. The manufacturer is retrieved by accessing the data in the record in the MFGR file **644** pointed to by the pointer (e.g. pointer **640**). The DPTR file **641** record also includes a pointer (e.g. pointer **642**) to a record in the CHAIN1 file **646**. This CHAIN1 file **646** may include one or more pointers to records in the XREF file **651**. Each of these records pointed at may include pointers **650** which point back into the DPTR file **641** which includes a pointer (e.g. pointer **640**) to a particular record in the MFGR file **644** comprising another manufacturer of that part. The process of looking up more records in the MFGR file **644** comprises searching records sequentially in the sorted DPTR file **641** until the HPTR file record corresponding to the DPTR file **641** record being considered for inclusion in the list of manufacturers is not related to the selected part number. At this point the part selection device **106** knows all of the manufacturers of the part number entered.

Upon selection of a manufacturer **594**, the part selection device **106** queries the user whether or not the user wants to enter another parts number **596**. If the user wants to enter another parts number, the part selection device **106** will prompt the user to enter a part number **588**. Otherwise, part selection means **106** displays the particular part information **598** and selects a particular part. The part information is derived from the data storage device **104** by accessing information pointed to by the records of the DPTR file **641** associated with the part number entered. The specific part information is accessed from the records pointed to in the XREF file **651** and subsequently the record pointed to in the INFO file **640**. Upon selection of a particular part **600**, part selection device **106** accesses all of the needed bearing information stored in data storage device **104** to select a particular part. Subsequently, the part selection device **106** ends the procedure get part by OEM part number for bearing **602**.

Alternatively a user may choose a bearing by part number to OEM part number. FIG. **21** is a flow chart diagramming a procedure for selecting a bearing by a part number and FIG. **23** shows a preferred embodiment file structure containing bearing information stored in data storage device **104** for use in selecting a bearing by part number. Upon selecting the choice of specifying a bearing by part number **604**, a user is prompted to enter a part number **606**.

Subsequently, part selection device **106** will check if the part number is valid **608**. The validity checking is accomplished by finding an HPTR record in the HPTR file **637** which is substantially similar to the part number

entered. The HPTR file **637** comprises HPTR records sorted in part number order. Each HPTR record comprises a pointer to a record within an HTAB file **636** comprising a part number. If the part number is not valid, part selection device **106** will prompt the user to enter a part number **606** once again.

Otherwise, if the part number is valid then part selection device **106** will display manufacturers of the part number **610** and prompt the user to select a manufacturer of the part number. The list manufacturers displayed is derived from data storage device **104** by accessing the same record number in the DPTR file **641** as was found to be a valid part number in the validity checking. The DPTR file **641** comprises the same number of records as the HPTR file **637** sorted in the same order by part number. Each DPTR record includes a pointer **640** to a manufacturer in a MFG.. file **644** and a pointer **642** to either a CHAIN1 file **646** when the selected part number is an OEM part number or to an XREF file **651** when the selected part number is not an OEM part number. The XREF file **651** is a file sorted by part number comprising records including a pointer **650** into a record within DPTR file **641**, a pointer into INFO file **652**, a pointer **654** to CHAIN2 file **662** and the price **656** of the part. The CHAIN2 file **662** comprises records including one or more pointers to records within XREF file **651**. Another file known as DOUBLE CROSS file **659** is included in the data storage device **104**. DOUBLE CROSS file **659** is a file with the same number of records as XREF file **651** sorted by part number comprising records including a pointer **660** into a record within CHAIN3 file **658**.

For example, a list of manufacturers is derived by taking HPTR record number (e.g. the record including pointer **638**) of the valid part number and using it to access the same record number in the DPTR file **641**. The record number in the DPTR file **641** corresponding to the same record number comprises a pointer (e.g. pointer **642**) to a record in the XREF file **651**. This XREF record corresponds to a record in the DOUBLE CROSS file **659** which includes a pointer **660** to CHAIN3 file **658**. The record pointed to in CHAIN3 file **658** includes one or more pointers back into DPTR file **641** each of which subsequently include a pointer (e.g. pointer **640**) to a record in the MFGR file **644** comprising an OEM manufacturer of that part number. The process of looking up more records in the MFGR file **644** continues until the last pointer in the pointed at record in the CHAIN3 file **658** does not contain a pointer back into the DPTR file **641**. At this point the part selection device **106** knows all of the OEM manufacturers of the part number entered.

Upon selection of a manufacturer **612**, the part selection device **106** queries the user whether or not the user wants to enter another parts number **614**. If the user wants to enter another parts number, the part selection device **106** will prompt the user to enter a part number **606**. Otherwise, the part selection device **106** ends the procedure get part by part number to OEM part number for bearing **616**.

Alternatively a user may choose a bearing by a partial OEM part number. FIG. **22** is a flow chart diagramming a procedure for selecting a bearing by a partial OEM part number and FIG. **23** shows a preferred embodiment file structure containing filter information stored in data storage device **104** for use in selecting a bearing by OEM part number. Upon selecting the choice of specifying a bearing by OEM part number **618**, a user is prompted to enter a part number **620**.

Subsequently, part selection device **106** will check if the part number is valid **622**. The validity checking is accomplished by finding an HPTR record in the HPTR file **637** which is substantially similar to the part number entered. The HPTR file **637** comprises HPTR records sorted in part number order. Each HPTR record comprises a pointer to a record within an HTAB file **636** comprising a part number. If the part number is not valid, part selection device will prompt the user to enter a part number **620** once again.

Otherwise, if the part number is valid then part selection device **106** will display manufacturers of the part number **624** and prompt the user to select a manufacturer of the part number. The list manufacturers displayed is derived from data storage device **104** by accessing the same record number in the DPTR file **641** as was found to be a valid part number in the validity checking. The DPTR file **641** comprises the same number of records as the HPTR file **637** sorted in the same order by part number. Each DPTR record includes a pointer **640** to a manufacturer in a MFGR file **644** and a pointer **642** to either a CHAIN1 file **646** when the selected part number is an OEM part number or to an XREF file **651** when the selected part number is not an OEM part number. The XREF file **651** is a file sorted by part number comprising records including a pointer **650** into a record within DPTR file **641**, a pointer into INFO file **652**, a pointer **654** to CHAIN2 file **662** and the price **656** of the part. The CHAIN2 file **662** comprises records including one or more pointers to records within XREF file **651**.

For example, a list of manufacturers is derived by taking HPTR record number (e.g. the record including pointer **638**) of the valid part number and using it to access the same record number in the DPTR file **641**. The record number in the DPTR file **641** corresponding to the same record number comprises a pointer (e.g. pointer **640**) to a manufacturer of that part number. The manufacturer is retrieved by accessing the data in the record in the MFGR file **644** pointed to by the pointer (e.g. pointer **640**). The DPTR file **641** record also includes a pointer (e.g. pointer **642**) to a record in the CHAIN1 file **646**. This CHAIN1 file **646** may include one or more pointers to records in the XREF file **651**. Each of these records pointed at may include pointers **650** which point back into the DPTR file **641** which includes a pointer (e.g. pointer **640**) to a particular record in the MFGR file **644** comprising another manufacturer of that part. The process of looking up more records in the MFGR file **644** comprises searching records sequentially in the sorted DPTR file **641** until the HPTR file **637** record corresponding to the DPTR file **641** record being considered for inclusion in the list of manufacturers is not related to the selected part number. At this point the part selection device **106** knows all of the manufacturers of the part number entered.

Upon selection of a manufacturer **626**, the part selection device **106** queries the user whether or not the user wants to enter another parts number **628**. If the user wants to enter another parts number, the part selection device **106** will prompt the user to enter a part number **620**. Otherwise, part selection means **106** displays the particular part information **630** and selects a particular part. The part information is derived from the data storage device **104** by accessing information pointed to by the records of the DPTR file **641** associated with the

part number entered. The specific part information is accessed from the records pointed to in the XREF file **651** and subsequently the record pointed to in the INFO file **640**. Upon selection of a particular part **632**, part selection device **106** accesses all of the needed bearing information stored in data storage device **104** to select a particular part. Subsequently, the part selection device **106** ends the procedure get part by partial OEM part number for bearing **634**.

Referring now to FIG. **24A**, **24B**, **24C**, **24D**, **24E**, and **24F**, these figures encompass a flow chart of an example showing the use of the preferred part selection device **106** and display apparatus **102** in a parts selection computer system **100**. The flow chart diagrams an example of using computer system **100** from a user's point of view by depicting graphic and textual parts-related information which may be shown to a user. This information preferably is shown to a user on a video display screen for review or for continued navigation through a series of menus.

Referring now more particularly to FIG. **24*a***, by starting at the introduction menu/screen display **700** a user is given the choice to select from a plurality of options including an option to go to a cross-reference menu/screen display **702** and a product information menu/screen display **730**. Upon selecting to go to cross-reference **702**, a screen such as the one shown in FIG. **26** is presented on the display. At this point the user may choose to look up various parts, e.g., batteries, filters, remanufactured electrical parts, lubrication and bearings. For this example we will focus on batteries; however, it will be appreciated by those skilled in the art that the cross-reference scheme shown here by example for batteries can be substantially duplicated for virtually any part benefiting from the present system.

Upon choosing batteries from the options in FIG. **26**, a menu/screen display **706** shown in FIG. **27** is presented to the user. At this point the user may choose to find a particular part by part number, equipment application or battery specifications. In choosing a part by part number, a particular part is automatically found in data storage device **104** and selected for the user. However, if a user chooses to find a part by equipment application, a menu/display screen **708** as shown in FIG. **28** is presented to the user. At this point the user may choose to add a unit to the list of equipment for this particular proposal or order. Upon choosing to add the equipment, a pop-up menu of equipment application section menu/screen display **710** as depicted in FIG. **29** is shown to the user. The user may select any one of the five types of equipment to find a part for. In this example, we will choose to select passenger cars; however, it will be appreciate by those familiar with the art that the other types of equipment will have similar types of menu selections in order to find a particular part for a particular product or piece of equipment.

Upon selecting passenger cars, a menu/screen display **712** as shown in FIG. **30** is shown to the user. The menu shows particular manufacturers of passenger cars to choose from to find a particular part for. As indicated in FIG. **30**, subsequent screens showing other manufacturers of passenger cars are available for viewing. In the preferred embodiment, the menu display screen shown is the first of a set of seven possible menu/display screens which may be shown on the display screen. For simplicity we will select for this example the Audi manufacturer.

Upon choosing the Audi manufacturer, a menu/screen display **714** is shown to the user so that he or she may select a particular set of years in which to look for a part for that particular manufacturer of passenger cars. For this example, we will choose the model years **1970** to **1977**. Upon choosing model years **1970** to **1977**, a menu/screen display **716** shown in FIG. **32** is shown to the user. On this screen display the user is given the choice to select a particular engine type which, in this case, include **80**, all others or optional engine types. For simplicity, we will choose an **80** engine for this example. Upon selection of the **80** engine, the user is presented a menu/screen display **718** shown in FIG. **33** which gives a brief summary of the selections made in choosing this particular piece of equipment. If the user is satisfied with this selection, he or she may return to menu/screen display **706** shown in FIG. **27**. Otherwise, the user may choose to edit the particular equipment selected or add another unit.

Upon returning to menu/screen display **706** shown in FIG. **27**, the user may choose to order the part at this point. If the user chooses to order the part, he or she is shown a screen similar to one as depicted in menu/screen display **720** shown in FIG. **34**. The menu/screen display **720** shown in FIG. **34** is related to the selections previously made in this example, and it will be appreciated by those familiar with the art that the menu/screen display will change depending upon the particular piece of equipment selected. The user may choose to display the price of the particular part **721** at this time.

If the user is satisfied with the parts that have been selected, he or she may choose to generate a report showing this proposal/order of parts. Upon selecting a reporting option, a menu/screen display **722** shown in FIG. **35** may be shown to the user. The user may choose to generate several types of reports. In this example, we will choose to generate a proposal/order. Upon choosing a proposal/order report selection, a menu/screen display **724** shown in FIG. **36** is shown to the user. At this point, the user may choose to generate a detailed or a summary report type.

Upon choosing a detailed report type, a report similar to one shown in screen display **726** and depicted in FIG. **37** is generated. Alternatively, the user may choose to generate a summary report type. Upon choosing the summary report type, a proposal/order would be generated similar to one shown in screen display **728** as depicted in FIG. **38**.

Alternatively, a user may choose to pick a particular battery by setting particular battery specifications, as shown in FIG. **24C**. For example, a user may choose to specify a BCI group as shown in menu/screen display **746** and depicted in FIG. **39**. Alternatively, a user may choose to specify a particular battery by cold cranking amps as depicted in menu/screen display **747** as shown in FIG. **40**. Alternatively, a user may choose to select a particular battery by reserved capacity minutes as shown in menu/screen display **748** and depicted in FIG. **41**. Alternatively, a user may choose to select a particular battery by voltage as shown in menu/screen display **750** and depicted in FIG. **42**. Alternatively, a user may choose to select a particular battery by dimensions as shown in menu/screen display **752** and depicted in FIG. **43**. Alternatively, a user may choose to select a particular battery by number of warranty months as shown in menu/screen display **754** and depicted in FIG. **44**. Alternatively, a user may choose to select a particular

battery by price as shown in menu/screen display **756** and depicted in FIG. **45**.

It is also possible for a user to-pick one or more of the battery specifications to further specify a particular battery for selection. Typically, it is necessary to pick more than one particular specification in order to limit the possible part choices down to a small number of batteries to choose from. Furthermore, in practice, a user will know several of the specifications for his or her particular need and, as such, selecting a particular battery through battery specifications may be very useful. After selecting a particular battery by any one of the three possible selection schemes including by part number, by equipment application and by battery specifications, a user can choose to generate a report or continue and pick another part, e.g., a filter, remanufactured electrical part, lubrication or bearings or perhaps may choose to select yet another battery for an order. As previously indicated, those skilled in the art will recognize that the present invention can be substantially duplicated for virtually any part benefiting from the present system.

Alternatively, when a user is shown menu/display screen **700** as depicted in FIG. **25**, he or she may choose to select product information. Upon choosing product information, a menu/screen display **730** as depicted in FIG. **46** is shown to the user. Menu/screen display **730** provides an opportunity to the user to select information about a dealer, batteries, filters, remanufactured electrical parts, lubricants, or bearings. If the user chooses to select information about a dealer, menu/-screen display **732** as shown in FIG. **47** is presented to the user. From this menu/screen display **732**, a user may choose to further select background information, parts information, or service information about a particular dealer. Alternatively, referring now to FIG. **46**, if a user chooses to learn more information about a battery, a menu/screen display **734** as shown in FIG. **48** is shown to a user. At this point, a user may choose to view a brief introduction, information about how a battery works, or construction features of a battery.

If a user selects the introduction, a screen display **736** as shown in FIG. **49** is presented to the user. The user may select to know more about CASE IH, sales/warranty outlets or warranty in particular. Upon selecting to learn more about CASE IH, a graphic display screen **738** as shown in FIG. **50** is presented to the user. Alternatively, upon selecting sales warranty outlets, a graphic screen display **740** as shown in FIG. **51** is presented to the user. Alternatively, upon selecting warranty, a graphic screen display **752** as shown in FIG. **52** is shown to the user.

Referring now to FIG. **24D** (or alternatively to screen display **734** shown in FIG. **48**) a user may choose to learn more about how a battery works. Upon selecting how a battery works, a screen display **758** as shown in FIG. **53** is presented to the user. As shown in FIG. **53**, the user may choose to display a graphic screen display concerning several different topics. As shown in FIG. **24D**, a user may choose to pick a particular topic such as choosing the right battery shown in screen display **760** and depicted in FIG. **54**. Upon displaying screen display **760**, a viewer may choose to continue viewing similar types of graphic screen displays in sequence such as screen display **762** depicting functions of a battery as shown in FIG. **55** or alternatively return to graphic screen display **758** as depicted in FIG. **53** and from graphic screen display **758** select any of the other graphic screen displays listed in the lower half of the screen depicted in FIG. **53**.

In either form of choosing a particular graphic screen display, the same screen display that should follow as shown by the arrow connectors in FIG. **24** is shown to the user. In particular, upon choosing to learn more about the charge/discharge cycle, **764** screen displays **766** shown in FIG. **56**, graphic screen display **768** shown in FIG. **57**, graphic screen display **770** shown in FIG. **58** and graphic screen display **772** shown in FIG. **59** are presented to the user. In the preferred embodiment, the group of screen displays **766**, **768**, **770** and **772** forms an animated sequence of screen displays which continually switch between the various four screens to show animation of the charging cycle of a battery. It will be appreciated by those in the art that such an animation comprises simply displaying several graphic screens in a sequence to show movement. Alternatively, from screen display **758**, a user may choose to display information about a fully charged battery as shown in screen **780** depicted in FIG. **60**, a discharging battery as shown in FIG. **778** depicted in FIG. **68**, a totally discharged battery as shown in screen display **776** and depicted in FIG. **62** or a charging battery as shown in screen display **774** depicted in FIG. **63**. Alternatively, from graphic screen display **758**, a user may choose to view another screen **759** shown in FIG. **64**. From graphic screen display **759**, a user may choose to view more information about cold cranking power as shown in graphic screen display **782** and depicted in FIG. **65**. Alternatively, a user may choose to view more information about engineering versus marketing ratings as shown in graphic screen display **784** depicted in FIG. **66**. Alternatively, a user may choose to view more information about reserve capacity as shown in graphic screen display **786** and depicted in FIG. **67**.

Alternatively, from graphic screen display **7224** shown in FIG. **48**, a user may choose to view more information about construction features. A flow chart of the operation of the construction features section of this example for batteries is shown in FIG. **24E** and **24F**. Upon choosing to learn more about construction features, a user selects construction features and a graphic screen display **788** depicted in FIG. **68** is shown to the user. At this point, the user may choose to select one of the menu items in the lower portion of the graphic screen display **788** or go to graphic screen display **790** shown in FIG. **69** or graphic screen display **816** shown in FIG. **70** which provide more menu choice items to learn about other construction features of the battery. Upon choosing any one of the menu choices shown in graphic screen displays **788**, **790** or **816**, the user is shown one of several graphic screen displays depicting particular construction features of the battery. By way of example, a user may choose to view more overview information about battery construction features. Upon doing so, a graphic screen display **792** shown in FIG. **71** is presented to the user. Alternatively, upon choosing to learn more about bone dry charging, a screen display **794** shown in FIG. **74** is presented. Alternatively, upon choosing to learn more about bone dry versus dry charging, a graphic screen display **796** shown in FIG. **73** is presented. Alternatively, upon choosing to learn more about the extended life of a battery, graphic screen display **798** shown in FIG. **74** is presented to the user.

Alternatively, upon selecting to learn more about bone dry versus wet charging, graphic screen display

800 shown in FIG. 75 is presented to the user. Alternatively, upon choosing to learn more about a hybrid battery construction, a graphic screen display 802 shown in FIG. 76 is presented to the user. Alternatively, upon choosing to learn more about intermediate application of a battery, a graphic screen display 814 shown in FIG. 76 is presented to the user. Alternatively, upon choosing to learn more about the cyclic capacity of a battery, a graphic screen display 812 shown in FIG. 78 is presented to a user. Alternatively, upon choosing to learn more about capacity retention of a battery, graphic screen display 810 shown in FIG. 79 is presented to the user. Alternatively, upon choosing to learn more about grid growth, graphic screen display 808 depicted in FIG. 80, 81, 82 and 83 are presented to the user.

In the preferred embodiment, the combination of FIG. 80, 81, 82 and 83 encompasses an animated sequence of graphic screen displays which show grid growth. Alternatively, upon choosing to learn more about computerized radio grids, a graphic screen display 806 shown in FIG. 84 is presented to the user. Alternatively, upon choosing to learn more about envelope separators, a graphic screen display 804 shown in FIG. 85 is presented to the user. Alternatively, upon choosing to learn more about epoxy anchoring, a graphic screen display 818 shown in FIG. 86 is presented to the user. Alternatively, upon choosing to learn more about grid vibration, graphic screen display 820 shown in FIG. 87 is presented to the user. Alternatively, upon choosing to learn more about sediment build-up, a graphic screen display 822 shown in FIG. 88 is presented to the user. Alternatively, upon choosing to learn more about intercell connectors, a graphic screen display 824 shown in FIG. 89 is presented to a user. Alternatively, upon choosing to learn more about venting systems, a graphic screen display 826 shown in FIG. 90 is presented to the user. Alternatively, upon choosing to learn more about terminal designs, a graphic screen display 828 shown in FIG. 91 is presented to the user.

The previous discussion concerning the sequencing of graphic screen displays as indicated in FIG. 24A, 24B, 24C, 24D, 24E and 24F is provided by way of an example. It will be appreciated by those familiar with the art that such a sequence of screens can be readily altered to perform numerous types of tasks including training and product presentations. It will also be appreciated by those familiar with the art that the overall topic of discussion could be any one of a number of different types of parts or information related to parts, for example, information about filters, remanufactured electrical parts, lubrication or bearings could also be important topics to provide training or sales assistance through the use of screen displays. As such, the present invention should not be construed to be limited to depicting information concerning a battery part but rather encompasses providing training or sales assistance about various types of parts and parts related information including customers, particular kinds of parts, particular manufacturer's parts, particular advantages to particular parts and any reasonable variation thereof.

Although the present invention has been described and illustrated with a certain degree of particularity, it is understood that the present disclosure of embodiments has been made by way of example only and that numerous changes in the arrangement and combination of parts as well as steps may be resorted by those skilled in the art without departing from the spirit and scope of the present invention as claimed.

What is claimed is:

1. A computerized method of selling parts for particular equipment specified by a customer, comprising the steps of:

a) receiving information identifying a customer's parts requirements for the equipment, comprising the step of receiving equipment application information, comprising an identification of the equipment with which one or more parts are to be used;

b) electronically specifying information identifying a plurality of parts and specifications for the parts;

c) gathering parts-related information for one or more parts within the plurality of parts which meets the customer's requirements, comprising the step of electronically associating at least one of the parts within the plurality of parts with the received equipment application information; and

d) receiving the gathered parts-related information and compiling the parts-related information into a proposal meeting the customer's requirements.

2. The method of claim 1 wherein:

a) the step (a) further comprises the step of receiving at least a portion of a manufacturer's part number; and

b) the step (c) further comprises the step of electronically associating at least one of the parts within the plurality of parts with the received portion of a manufacturer's part number.

3. The method of claim 1 wherein:

a) the step (a) further comprises the step of receiving feature information; and

b) the step (c) further comprises the step of electronically associating at least one of the parts within the plurality of parts with the received feature information.

4. The method of claim 1 wherein the step (a) further comprises the steps of:

a) selecting a type of the equipment; and

b) selecting a manufacturer of the equipment.

5. The method of claim 1 wherein the step (d) comprises the step of generating a printed version of the proposal.

6. The method of claim 1 wherein the step (d) further comprises the step of including within the proposal specifications corresponding to the one or more parts which meets the customer's requirements.

7. The method of claim 1 wherein the step (d) further comprises the step of including within the proposal price information corresponding to the one or more parts which meets the customer's requirements.

8. The method of claim 1 wherein the step (d) comprises the step of including within the proposal graphical information corresponding to the one or more parts which meets the customer's requirements.

9. The method of claim 1 wherein the step (d) comprises the step of including within the proposal textual information corresponding to the one or more parts which meets the customer's requirements.

10. The method of claim 1 wherein the step (d) comprises the step of generating an animated demonstration illustrating how a particular identified part works.

11. The method of claim 1 wherein the step (d) comprises the step of graphically illustrating within the proposal construction features of a particular one of the parts which meets the customer's requirements.

12. The method of claim 1 wherein:

a) the step (a) further comprises the step of receiving information identifying a first feature and a second feature of a particular part within the plurality of parts;

b) the step (c) further comprises the step of accessing a storage means and retrieving information to compare the first and second features, comprising the steps of:

i) generating a first set of information describing the first and second features; and

ii) generating a second set of information describing how the first and second features affect performance of the particular part; and

c) the step (d) comprises the step of compiling the first and second sets of information into the proposal.

13. The method of claim 12 wherein:

a) the step of accessing the storage means and retrieving information to compare the first and second features further comprises the step of generating textual information describing the first and second features; and

b) the step (d) further comprises the step of compiling the textual information into the proposal.

14. The method of claim 13 wherein:

a) the step of accessing the storage means and retrieving information to compare the first and second features further comprises the step of generating graphical information describing the first and second features; and

b) the step (d) further comprises the step of compiling the graphical information into the proposal.

15. The method of claim 1 wherein the method is executed by a portable personal computer.

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